Art's Master-Piece.

OR,

A Companion for the INGENIOUS of either SEX.

IN TWO PARTS.

I. The Art of Limning and Painting in Oil, &c. in all Particulars, viz. Drawing and Painting Faces, Bodies, Garments, Landskip, preparing and laying on Colours, also colouring Mezzo-tinto Prints, Gilding on Wood, Metals and Leather. The newest Experiment in Japanning, to imitate the Indian way, Plain and in Speckles, Rock-work, Figures, &c. Receipts for making the several sorts of Varnishes, Colours, &c. To make Artificial Tortoiseshell, to Dye or Stain Ivory, Horn, Bone, Bristles, Feathers, and sundry sorts of Woods for Cabinets. The Mystery of Dying Silks, Stuffs, Woollen and Linen Cloth. To take Spots, Stains, Pitch, Tar and Iron-moulds out of Silks, Stuffs, Linen and Woollen, and to recover faded Silks, Linen, &c. The Art of Perfuming and Beautifying. Divers Physical and Chyrurgical Receipts. To make London Powder-Ink, other Powder Inks, and the shining Japan-Ink. With many other notable Things.

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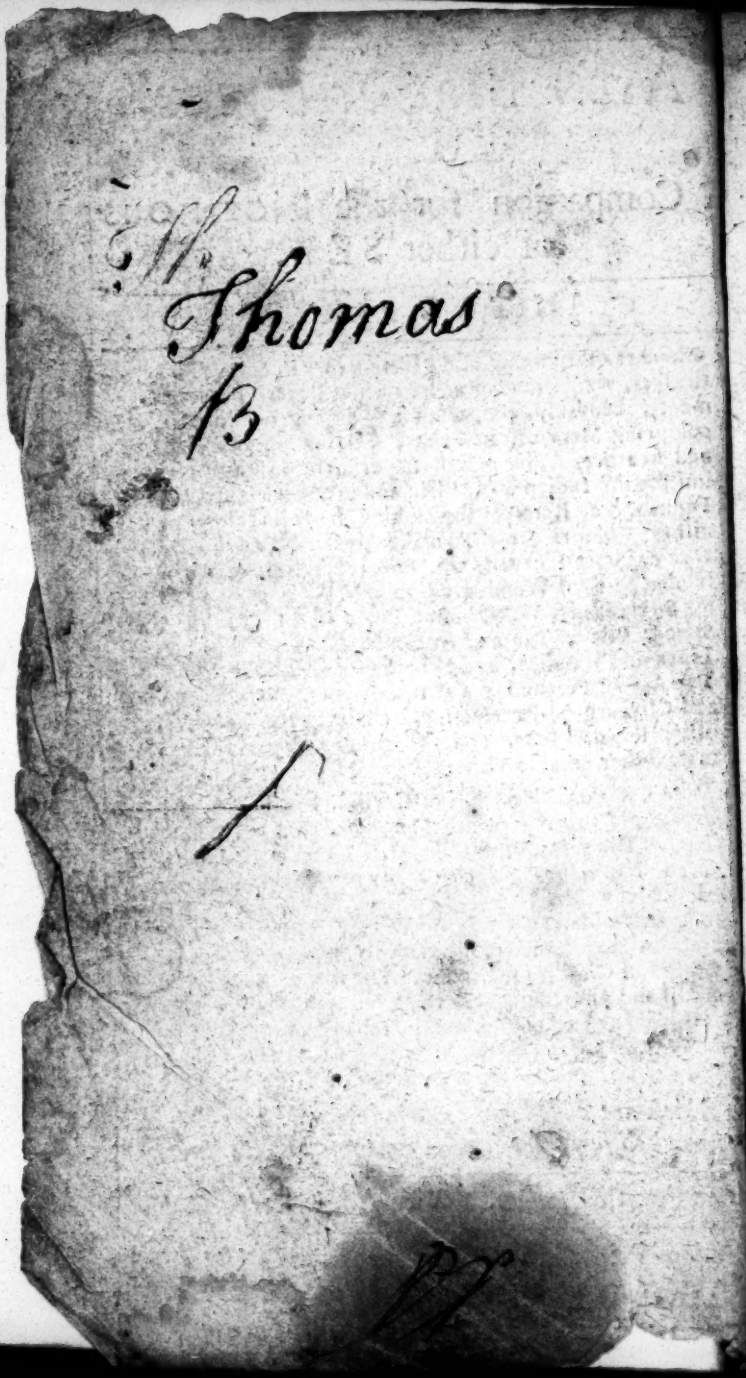
To which are added many Curiosities and rare Secrets, known to few, and highly Profitable and Pleasant.

The Fourth Edition. With Additions by *C. K.*

London, Printed for *G. Conyers* at the *Golden Ring*, and *J. Sprint* at the *Bible*, both in *Little-Britain*. Price One Shilling.


Thomas

THE EPISTLE TO THE READER.

Kind Reader,

I *Think I need make no long Apology for this Book, since the Title is sufficient to recommend it to the perusal of the Ingenious, though it contains but hints of what in larger Variety of curious Things are more Copiously inserted for the Accommodation of Young Gentlemen, Genlewomen, and others; done with that Care and Exactness, in all the many particulars, that without vain Glory, I may presume to say, that this, nor former Ages have not produced of these kinds any thing so curious and compact.*

It carries with it all along, as linked in a Chain, Pleasure and Profit, and cannot

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but be grateful to the Fancies, especially of the Younger sort, who putting in Practice what best suits their Minds, may much please others and accomplish themselves.

As for Limning or Painting, it has always been in high Esteem with the greatest and most Honorable Persons in the World, and is an Innocent and Diverting Recreation. Japanning I confess is not so Antient, especially in these parts of the Globe, therefore to be esteemed as (indeed it is) the more rare and considerable; as for the rest too tedious to enumerate in a short Epistle, though some of them have been long in use, Time and Industry have better improved them to Advantage, such as are Industrious to imploy their Talents for the good of themselves and others. And so the whole Work not comprehending many Sheets, I shall omit what more I justly might say, and submitting to the Censure of the Candid and Ingenious Reader, take leave to subscribe my self,

Your Most Humble

Servant,

C. K.

Thommas Barker

his Book

THE Curious ART OF DRAWING, AND Preparing for Limning and Painting in OIL, &c.

The Introduction to the Practice in some Things necessary to be provided for the proceeding in this Art.

THE curious Art of Limning or Painting in Oil has in all Ages been wonderfully admired and approved, as the Master-Piece of other Arts and Sciences, wherein Art so exactly imitates Nature, that Motion only seems to be wanting; and many such rare Pieces have been Drawn, that they have at the first Blush deceiv'd the Eyes of the curious, who have taken them for real living Beings; and tho' the Eye and Hand are mainly required herein, the one to direct, and the other to operate, yet the Mind or Imagination must furnish out a

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great part of the Curioſity, having Idea's, or the true Shape of Things always in a Readineſs.

This cannot be done haſtily, but muſt be done by a ſteady Practice and curious Obſervations, and the firſt in this Undertaking is to prepare your ſelf with ſuitable Materials, and amongſt others *French* Chalk red and white, that it may be cut into curious taper Pencils, to draw the out-Strokes of any Figure you deſign, Sallow-wood ſo burnt that you may do the like by it, and if theſe Strokes hit not at firſt to due Proportion, they may be rubb'd out with the Feather of a Mallard's Wing, and ſo till you find them right, then go over your Strokes with a ſtrong well pointed Pencil, either of Red or Black Lead: To make the Impreſſion more even and regular, it will be proper to have Pens made of Raven or Crow Quills to finiſh the finer Strokes, alſo a Rule and Compaſs with 3 Feet, to take in and out at the Points as you have occaſion, the one of white or red Chalk, the other of Black Lead, and a third of any other Paſtil, and theſe in moſt Drawings are proper to mark out equal Diſtances after the drawing of the out-Strokes. There are other Things required, which in their proper place I ſhall ſpeak of.

Being thus far entred, come a little nearer to the Practice, and make your Entrance on it with plain Geometrical Figures, ſuch as are the Circle, Square, Oval, Cone, Triangle, Cylinder, which at firſt uſe your ſelf to mark out with your Rule and Compaſs, till you can readily do it with your Hand, and theſe will much aſſiſt you in the beginning of this curious Undertaking, the Circle well made, will direct you in orbicular Forms, as the Globe of the Earth, Spherical World, Moon, Sun, and the like;

is

is very proper in confining the Picture you are to copy; the Oval gives you Directions for the Mouth and Face, the Foot of a Wine-Glaſs, the Mouth of a Well, and the like; The Cone aſſiſts in Drawing Columns, Spires, tops of Towers, Steeples, *&c.* The Triangle is of admirable uſe in making the half Face; the Cylinder gives you Aſſiſtance in drawing Columns, Pillars, Pilaſters, and other things belonging to Architecture; the Poligon may be alſo uſed for Ground Plats, Fortifications, *&c.* and Angles and Arches in Proſpective.

Theſe things premiſed, try to Draw ſeveral ſorts of Fruits and Flowers, as Grapes, Cherries, Peaches, Apples, Apricots, Tulips, Pinks, *&c.* alſo Inſects, Trees, Branches, and the like, and from theſe proceed to practice on Birds, Beaſts, *&c.* conſider well their proportion, colour, ſlowneſs, ſwiftneſs, fierceneſs, and many other things natural to them, and the better at firſt, till your Mind can well frame ſuch Ideas it will be proper to have good Drawings to imitate, and ſo go on by degrees, and other things, as Fiſh, Melons, Roots, Oranges, *&c.* and by no means miſtake their ſuitable lively Colours, nor proper Form, and then you may venture on humane Faces and Bodies, wherein lies the Excellency of this Art.

Of Drawing Faces, &c.

When you come to Draw a Face, you muſt well weigh and conſider in what poſture it muſt be done, whether ſideways, upward, forward, or downward, touching lightly the Features, where the Noſe, Eyes, Mouth and Chin ought to ſtand, then go more perfectly over them,

for the Circles, Squares, and Triangles uſed in this matter, may ſufficiently guide you where the Noſe, Eyes, Mouth and Chin ſhould ſtand; but in taking the Features, obſerve with a ſtedfaſt Eye, the principal Muſcles in the Face, which in perſons of years appear very much, and there is uſually to be obſerved a threefold proportion in a Face, as in the firſt place, from the top of the Forehead to the Eye-brows, in the ſecond place, from thence to the bottom of the Noſe, and laſtly, from thence to the bottom of the Chin, obſerving in this caſe a due proportion in the length of the Forehead and Noſe.

In a full Face, the diſtance between the Eye-brows, conſiſts of the length of one Eye, but where there is a ſide, or three quarters Face, the diſtance muſt be leſſened anſwerable to the proportion, the Noſtrils muſt be placed directly againſt the nether corner of the Eyes, and if the Face you draw be Plump, or Fat, the Cheeks muſt ſwell; but conſider, in a Lean Face, the Jaw-bones ſtick out, and the Cheeks fall ſomewhat in.

In a ſmiling Countenance, the Corners of the Mouth turn ſomewhat upwards, and in a ſour frowning Countenance, the Forehead is bending, and Wrinkles appear on the upper part of the Noſe.

In Drawing a fore-right Face, you muſt make a perfect Oval, divided by two Lines into three equal proportions, in the firſt part place the Eyes, in the ſecond the Noſtrils, and in the third the Mouth, keeping the Eyes an equal diſtance from each other.

In Drawing an upright Head, you muſt make it in equal diviſions, with three Lines every way, either

either upwards, downwards, higher or lower, divided as the former.

To Draw the ſhortned or enclining Face, obſerve how the Lines agree, and ſo in their proper places you may Draw the Mouth and Noſe, and the reſt of the parts after you have brought your hand a little into practice; and note, whatſoever proportion the face bears, your out-ſtrokes muſt be formed accordingly.

As for the Noſe, you muſt among other things particularly obſerve the roundneſs, hollowneſs, and Indentings of the Noſtrils.

As for the Hands, their Poſtures are various, but a true meaſure muſt be obſerved in it, according to the proportion you draw, as likewiſe the Arms, as far as they appear bare, then proceed to Draw the Feet with meaſure and without, but for theſe it will be requiſite to get Drawings to practice on at firſt, then practice Drawing Feet and Legs conjunct or ſeparate, and proceeding from the Members, draw the other parts of the body, and practice firſt on a Child, wherein there is more eaſe, becauſe they are of a Fatter and Plumper Face and Body, the Sinews, Lines and Muſcles, not appearing as in Men and Women.

In Drawing, begin at the Head, and ſo proceed by degrees to the Feet, running it lightly over at the firſt, and as you ſee occaſion, encreaſe the fulneſs, let the parallel Joints and Sinews be equally proportioned, as alſo the Muſcles, and their Attendants, and exactly oppoſite, and the Motions of the Body be anſwerable to each other, and the Limbs a true Symetry, one not being larger than the other, nor longer where Nature requires it not.

In Shadowing, obſerve to caſt them ever

one way, as in the Figure of a Woman, if you begin the Shadow at the left Cheek, you muſt continue the like on the left ſide the Neck, Body, and all other parts, unleſs the Light ſide of it requires to be dark, by reaſon ſome other Body ſtanding between the Light and it, as put the caſe three Men ſtand together, the middle Figure muſt be darkned by the foremoſt, unleſs the Light by facing it comes between them.

Obſerve, that all Shadows, the further off they are, grow fainter, and circular Bodies muſt have a circular Shadow, according to the Light that makes it.

In Drawing a Figure ſtanding, Draw that Leg the Body ſtands firm upon, ſtrait and ſteady, or elſe the Figure will ſeem to decline, as if it were falling.

As in naked Figures, the Out-Lines are required to be drawn firſt, ſo do it in Drapery or Clothing, leaving Spaces within for your greater or leſſer Folds, and break them into leſſer that may be contained within them, and the cloſer the Garment fits to the Body, the ſmaller and narrower muſt be the Folds, and in Shadowing the Innermoſt, it muſt be the harder, and the outermoſt the ſofter, continue the great Folds, but as for the leſſer, break them off where occaſion requires it; and the finer the Drapery is, the finer and ſharper muſt the Folds be, and the Shadow the ſtronger and finer to the Eye, always obſerving, that the Garment that fits cloſe, as the Body Coat of a Man, or Breaſts of a Woman, and the like, require no Folding, but rather with a ſweet Shadow repreſent that part of the Body, that the Garment appears to cover, as Womens Breaſts, with a ſweet round Shadow, and the like.

Of

Of Colours uſeful in Limning or Painting, and other matters.

The next thing to be conſidered, the Cloth primed, and the Drawing put on, is the preparing your Colours, which in Oil Painting muſt be with Linſeed Oil, unleſs for Linen, and then Walnut is a great deal better, for it will not turn yellow as the other in time will, when mixed with curious white.

You muſt grind your Colours on a Stone with a Muller, till they are as fine as Butter, *&c.* The Colours proper to be uſed in Limning are,

The Blacks; Sea-cole black, Ivory black, Lamp black, and Earth of Collen; the White, White-Lead; the Green, Terravet, Verditer, and Verdigreaſe; the Yellow, Spruce Oaker, Pink or Piement, and Maſticot; the Blues, Smalt, Biſs, Indico, and Ultramarine; the Reds, Red-Lead, Vermillion, Lake, Indian-red, and Ornatio; the Colours indifferent are Umber, Spaniſh brown, burnt Spruce.

Theſe are the chief to be laid in Oil, but Ivory, Spruce-Oaker and Umber muſt be burnt before they are ground; and as for Maſticot, Ultramarine Maſticot, Vermillion, Smalt, and Orpiment, you may temper them on your Pallat without grinding, though grinding is better, becauſe it mixes them the better with the Oil, and makes them dilate and ſpread more eaſily: And what of theſe are to be burnt, perform it in a Crucible, taking care they be not overburnt, to loſe their Tincture.

Take care in the next place to get good Pencils of all ſizes, proportionable to your Work, a Pallat or Board to lay Colours on whilſt you are

are uſing them, an Eaſle to place your Cloth upon or againſt, and a ſtraining Frame, to which it muſt be nailed, a Moll-ſtick or Stay, made of Braſil, or ſome ponderous Wood, not ſubject to bend, about a yard long, at one end tye a Ball of ravelled Cotton, with a Leather over it, ſo that with your left hand, holding it againſt the Work, you may ſupport your right Arm with it, whilſt you are Working.

Of Mixing or Tempering of Colours.

To make a Violet colour, take Indico, White Lead, and Lake, mix them well, and the more or leſs of each quantity, will make it deeper or lighter.

A Lead Colour make of white and Indico, well mixed and tempered together.

For a Scarlet colour, take Lake, Red-Lead, and a ſmall quantity of Vermillion.

For a Flame colour, take Red-Lead and Maſticot heightened with white.

For a Light-green, take Pink and Smalt, and as you ſee occaſion lighten it with white.

For a Purple colour, take Spaniſh brown, Indico, and white, well tempered together.

For a Bay colour, mix Spaniſh brown and white.

For a Murrey colour, mix Lake and White; and ſo by often tempering Colours, and Practice, you may find out the reſt.

Of the Firſt Operation or Sitting.

Having thus far proceeded, it will be time to begin your Work, and having laid your Ground for the general Complexion, and Drawn the

the Out-Lines, which you muſt do with Lake and White mingled, Drawing very faintly, that if there be any fault it may be rubbed out and amended; the proportion of the Face Drawn, add to the former colour a ſmall proportion of Red-Lead, tempering it faintly to the colour of the Cheeks and Lips, the tip of the Chin and Ears, about the Eyes and Roots of the Hair, placing red Shadows, and the Shadows muſt not be put in with the flat of the Pencil, but with ſmall touches, after the manner of hatching, and in this wiſe go over the Face, and cover the Ground Work, with theſe and the like ſhadows, but in the dead Colours your Curioſity need not be great, only ſtrive as near as you can to imitate Nature, for the roughneſs of the Colours may be mended at the ſecond Operation.

Having duly placed and proportion'd your red Shadows, proceed to put your faint blue Shadows about the Corners of the Eyes and Balls, *&c.* and the greyiſh blew under the Eyes, and about the Temples, working them ſweerly and faintly over, by degrees, beginning the Shadow as the Light falls, as likewiſe the hard Shadows on the dark ſide of the Face, under the Eye-brows, Chin, Noſe and Neck, with ſtrong touches on thoſe places, ſo paſs to the light ſide of the Face, and bring all your Work together to an equal roundneſs; yet at this time give not perfection to any particular part, but well view the Work, and conſider how near you come to the Life, not only in likeneſs, but poſture, colouring, *&c.*

Having now wrought the faint Shadows into the red Shadows, you may take a touch at the Hair, diſpoſing it in ſuch Curls, Folds, *&c.* as beſt

beſt contribute to Grace and Ornament, only drawing it with Colours ſuitable to the Life, and deepen it ſomewhat more ſtrongly in the deepeſt ſhadowed places, and ſo deſiſt from your firſt Operation.

Of the ſecond Sitting or Operation.

The Party to be Drawn in this ſecond Sitting, muſt take the place and poſture as before, and now you muſt take a more curious Survey of the Lines and Features, and as you drew them over roughly before, now is the proper time to ſweeten them with the ſame Colours, by Working and Drawing them one into another, ſo that no rough edge or lump of Colour may appear, and you muſt do this with a Pencil ſharper than the former, to render the Shadow ſmooth and ſoft.

This done, proceed to the backſide of your Picture, and if there be a Curtain required, and it be ſuppoſed of blue Satten, then temper Bice with your Oil, and draw the Out-lines of the Curtain, as alſo your Picture, and lay it over very thin and airy with a large Pencil, that it may be the whole Ground, intended to be done with Blue, and then lay it over again with a ſubſtantial Body, with the ſame Colour, doing it ſwiftly that no part of the Colour may dry before it be all finiſhed, and in the ſame manner you may lay the backſide with any Colour.

This done, lay your Linnen of a fair white, and your Drapery flat, with the Colour you intend it; then view the Face again well, noting what Shadows are too light or too deep, and labour to reduce the ſeveral Shadows to their perfection,

perfection, then draw the Lines out of the Eye-lids, and Shadow the entrance into the Ears, the deepneſs of the Eye-brows and all the moſt material Marks and Notes in the Face, do this with a Curious ſharp Pencil, then heighten the Hair, deepening it as it appears in the Life, caſting over the Ground ſome looſe Hairs, which will not only make it look airy, but ſeem as if the Picture ſtood a Diſtance from the Curtain.

In ſhadowing the Lines, which muſt be done curiouſly, uſe Black, White, and a little Blue, deepen the Black with Ivory-Black, and put to it a little Quantity of Indico or Lake, and ſo the ſecond Operation is finiſhed.

The third Sitting or Operation.

Herein where you find any defect, or Judge it reaſonable, you muſt give ſtrong touches, taking curious heed for the rounding of the Face, which will now be better accompliſhed than before, obſerving diligently what yet may conduce to ſimilitude, as Moles, Scars, Caſts with the Eyes, drawing of the Mouth, and the like.

For Garments or Ornaments, the Ground for Blue being laid with Bice, the deepening muſt be Indico, and a little Lake, the lightening white, very fine, faint and fair, and for the greater Ornament, the Light may be mixed with Silver or Gold, but of Drapery more particularly in Mezzo-Tinto Painting, for Pearl Colour the Ground muſt be White and Indico, and the Shadow Pink and Black; if the Body requires to be in Armour, let Leaf Silver be the Ground, and when it is well dried and burniſhed, work the Shadow with Silver, Umber and Indico,

Indico, and the Shadow on the Silver as the Life directs.

For Gold Armour, lay Shell-Gold for the Ground, or Liquid Gold, and ſhadow it with Lake, Engliſh-Oaker, and a mixture of Gold.

For Drawing a fair Complection.

To do this, make a mixture of a ſmall quantity of White, and twice as much Lake and Vermillion, temper them well with the flat of a Knife upon the Pallat, and let it be uſed as the deepeſt Carnation in the Face, then adding a little part more of White, reſerve that for a lighter Carnation, and yet a third part being reſerved, add more White to it till it comes to the lighteſt colour in the Face, and ſo proceed to prepare the faint ſhadows.

In doing this, take Smalt, and mix it with a little White, which may conveniently ſerve for the Eyes, then ſeparate the greateſt quantity, and add to the reſt a little Pink, and theſe well tempered will be ſufficient for the greeniſh ſhadows in the Face, then proceed to prepare your deep ſhadows, do it with Pink, Ivory-black, and Lake, a like quantity of each, temper them well together, and if the Complexion you draw, requires redder ſhadows, add more Lake; if bluer or greyer, more Black, if yellower, more Pink

Having prepared your Pallat with ſuitable Colours for a fair Face, conſider again what other Colours are required; if the Complexion be more Brown or Swarthy, and in ſuch caſes temper the Colours as before, putting a little quantity of burnt Oaker amongſt the Lake, and Vermillion and White, that it may amongſt

mongſt other heightened Colours appear Tawny; and in this Caſe, temper ſo much Oaker as will juſt turn it; and for your very deep, and very faint Shadows, uſe the ſame as for the former Complexion.

For a Tawny Complexion uſe the ſame as before, however prepare the ſhadows, of burnt Oaker and Umber.

For a very black or dark Complection, prepare the ſhadows as the foregoing, but as for your lightening, take Lake, burnt Oaker, with White and Black, however, but a little of the White muſt be put in at firſt, that by degrees it may be the better worked up, and obſerve that the ſingle Shadows laid at firſt upon your Pallat, and well tempered according to the foregoing directions, ſerve as Shadows for all Complections.

Further Directions for Colouring Garments, &c.

Theſe Garments, or Drapery, require to be made ſuitable in their Colours; for Red therefore, lay the Ground with Vermillion, glaze it over with Lake, and heighten it with White.

For Scarlet, let Vermillion be the lighteſt, deepned with Lake, and heightened with Indian Red.

For Crimſon Velvet, lay a Ground of burnt Oaker, Vermillion and Indian Red, glaze it with Lake, and touch it up with Vermillion.

For a ſad Red, heighten Indian Red with White, and deepen with Black, Pink and Lake, well mixed together.

For Green, heighten Bice and Pink with Maſticot, and deepen it with Pink and Indico.

For Green Velvet, lay the dead colour with

a little White and Lamp-black, glaze it with Verdigreaſe, deepen with Pink and Indico, and heighten with White and Pink.

For Yellow, uſe Maſticot, Umber and Yellow Oaker, lay the dead colour with Maſticot and White in the higheſt places, and with Oaker in the meaneſt, in the darkeſt with Umber, glazing when dry with Pink.

For Blue Garments, take Indico and White, firſt laying the White in its due place, and then your mean colour, *viz.* Indico and White, well tempered in their proper places, then deepen with Indico, and when dry glaze it with Ultramarine.

For Black Garments, let the dead colour be Lamp-black; and a little Verdigreaſe and go over it when dry with a little Ivory-black, and when you have heightened it with White, go over the Work with Verdigreaſe and Ivory-black.

For Orange colour, mix Lake and Red-Lead, laying the lighteſt part with Red-Lead and White, the mean part only with Red-Lead, and the deeper with Lake, and if it be neceſſary you may heighten with White.

For a Cloth Colour, let the Ground be Umber and White, and for the deeper Shadows Black and Umber, for the mean Oaker and Umber and heighten it with Oaker and White, and ſo much for Colouring Garments.

Inſtructions how to Frame and Paint Landſkip.

In this Work of Painting with Oil, begin with the Sky and Sun Beams, and the lighter parts, and then the Yellow, which muſt be done with Maſticot and White, the next your blue

Sky

Sky with Smalt, leaving no part of the Ground uncovered, but lay the Colours ſmooth all over, working the Sky downwards towards the Horizon, ſtill ſuffering it to go fainter as it enclines nearer to the Earth, and work the Tops of Mountains and other Objects very remote, ſo faint as they may appear loſt in Miſt or Air, and as for the neareſt and loweſt Ground, it muſt be a dark brown Earth Colour, enclining a little to Yellowiſh and Green, as the nature of it requires, the next a light Green, and ſo proceed gradually; as they loſe in their diſtance you muſt leſſen their Colour, obſerving not to make any thing that is to be ſeen at a great diſtance, perfect or really, becauſe you muſt imagin it is at ſuch a diſtance that you cannot well diſcern it, but expreſs it in Colours weakly and faintly, as your Eye judges it may be, always taking notice to place the Light oppoſite to the Dark, which will very much extend the Proſpect, and do it ſo that the Shadows may loſe in their proportion of diſtance, their Force by little and little, as they remove from the Eye, obſerving always to put in the ſtrongeſt Shadows neareſt; put no Moon nor Stars but in a Night-piece, for they are not otherways naturally proper, becauſe they cannot be well ſeen in the Day; if you imitate an over-caſt Sky, where black Clouds threaten a Storm, the Shadows may be on the meeting parts of the Clouds, this may be alſo done with Colours mixed with Water wherein Gum-Arabick has been diſſolved.

If in any fair Landſkip you expreſs the Light of the Sun, always obſerve throughout the whole Piece, that you caſt the Lights of your Trees, Rocks, Hills, Buildings, Ruins, and all other things expreſſed in it that way; obſerve

alſo

alſo to leſſen your Bodies proportionable, as they are nearer or farther diſtant, and carry it off ſo far that the Earth and Sky, or Water ſeem to meet, Rivers as they run to a diſtance muſt leſſen their Streams, ſo Ships or Boats, and the like.

As for Living Creatures, Beaſts, Fowls and Serpents, or Inſects, you muſt conſider their Proportion, Shape and Colour, and get Draughts or Patterns, which will be better than Printed Directions, and theſe kinds being numerous, for Brevities ſake I muſt omit to treat of them.

To lay on Mezzo-tinto Prints on Glaſs.

In undertaking this, curiouſly lay the Prints flat-ways in warm Water, of the fineſt and thinneſt Paper, for that which is rough and thick will not do near ſo well, if at all, let them ſoak well, and your Glaſs being very white and thin, go over it with Venice Turpentine ſpread thin with a pliable Knife, and dab it all over with your Finger, that the Turpentine may ſeem rough.

This done, take the ſoaked Print and lay it on a clean Cloth even, then preſs it with another, to take out the Water, then lay it on a Glaſs, the Print next it, beginning at one end, ſtroaking outwards the part already fixed to the Glaſs, that neither Wind nor Water may be retained between, to wrinkle it, then with a little Spunge, or your Fingers, wet the backſide, and lightly by degrees roll off the Paper carefully, without making Holes, eſpecially in the Lights, which are the tendereſt, and when the Print appears very tranſparent on the backſide, let it dry about two Hours, then varniſh it o-

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ver with Turpentine or Maſtich Varniſh, till you can ſee through it, and a Nights drying will prepare it to be worked on with Colours.

If you would have all the Paper off, ſo that nothing but the Print ſhould remain, lay it as before, with Oil of Maſtick, and a little Turpentine, and a Bruſh will fetch off all the Paper.

To Paint Landſkips of Mezzo-tinto.

As for the Poſture to do any of this Work, the beſt is ſitting to a true Light, your Pencils muſt be fine, and in the firſt place glaze all the places that require, and if you would have them thin as they ſhould be, and ſoon dry, mix Varniſh as they are laid on, and in four Hours you may venture other Colours.

In this Work glaze the neareſt and greateſt Trees, Ground them with brown Pink, or if you fancy them greener, uſe diſtilled Verdigreaſe, and where the Leaves and Weeds that appear in ſome Landſkips very ſprightly and extraordinary green, muſt be glazed with diſtilled Verdigreaſe, and Dutch Pink, the Trees appearing farther off with only the former; the Hills, Rocks, Mountains and Trees at the greateſt diſtance, glaze with Smalt, a little Lake, and Verdigreaſe thinly mixed with Varniſh; as for the Skies, uſe Ultramarine or fine Smalt, mixed with thin Varniſh, glaze it over two or three times with a large clean Pencil, and nimble Strokes; if Buildings or Ruins of Buildings appear in it, finiſh them firſt; and the mixture of Colours for theſe conſiſt of Yellow, Black, White, and now and then a tincture of Red.

To

To finiſh Ground Trees and Skies, begin with the neareſt and largeſt Trees, do over the lighteſt Leaves with white Pink and a little Smalt, and neatly do over the darkeſt and neareſt Leaves with a little Pencil dipped in Varniſh, and thoſe Trees you would have very beautiful, Paint with a mixture of Verdigreaſe, Yellow Maſticot and White, the darker parts with white Verdigreaſe and Pink, as alſo thoſe Trees you glaze with Verdigreaſe only, they being very light mixed with White.

As for the Skies and Foreſkips, if any Clouds appear, let them be touched with Varniſh, and a light Colour made of white Lake and Yellow Oaker; touch alſo with theſe the light parts of Hills, likewiſe Towns, and the remoteſt diſtance; then mix White and Smalt, as light as conveniently may be, and Paint over the Sky, add a Tincture of Lake for the dark Clouds; let the Colours lie even and thin, and when finiſhed, give it time to dry, to make it look more lively, ſet the Picture againſt the Light, that the Shadows may appear.

Of Painting Figures this way, as Men, Women, &c.

In Painting a Face, where there are deep Shadows, glaze and touch them thinly with brown Pink, Lake and Varniſh, alſo the black Ball, and white Speck of the Eye, as you will be directed by the Print, the round white Ball muſt likewiſe be of a convenient Colour; if the Lips are to be of a curious Red, glaze them with Lake or Cazamine, and then begin with the dark ſide of the Face, and Paint the Shadows with the Colour more red than uſual; to do

do this, Yellow Pink, Vermillion and White, are moſt proper; and note, no Varniſh muſt be uſed in Painting Fleſh Colours, except in glazing the Shadows, for the Varniſh drys ſo faſt, that you cannot ſweeten the Shadows of the Fleſh.

After this, give a few touches on the ſtrongeſt Light of the Face, as the Forehead, top of the Noſe by the Eyes, Chin and Mouth, which Colour muſt be made white with pale Maſticot, or Yellow Oaker, and a little Vermillion mixed, according to the Complexion intended, then mix that Colour a little darker, and lay it on all the Face that before you had not very carefully Painted; yet that for the Mouth and Cheeks muſt be ſomewhat redder.

Now with a fine clean Pencil, that has been worn a little, hatch and ſweeten the Fleſh Colours and Shadows ſweetly together, taking care to cleanſe your Pencil as often as it is requiſite, ſo that whilſt the Piece is moiſt and wet, you may regulate Cheeks too pale, or any other Defect.

If the Complexion be Swarthy, mix the Fleſh Colour with White, Brown, or Yellow Oaker, and light Red; with agreeable Shadows; and by this means you may Paint Naked Breaſts, Bodies or Hands, always being careful that your Pencil be ſteadily guided, for the leaſt Slip marrs the Feature, and treſpaſs not on Features and Lines of a diſagreeing Colour.

How to Paint the Hair.

In this Painting, you have no occaſion to uſe Colours or Varniſh near ſo dark as the Life,

for the Print contributes to the darkening of it; as ſuppoſe you were to Paint Black Hair, you mix black Red Oaker with a touch of light Red or Lake, and theſe may well produce an Aſh-Colour, and the Hair coloured with it, will ſhow you a natural Black; if you would make the Curls ſtronger, with a lighter Colour touch the lighteſt part, and the darkeſt with the contrary, which you may well ſee through, if the Colours are not laid too thick.

Of Painting Garments or Drapery.

If you are to Paint Cloth or Drapery, in a broken Colour, obſerve carefully its Mixture; however you muſt make three degrees of that Colour, one the proper Colour, another more light, and the laſt darker, for it muſt be for the darkeſt Folds, and the lighteſt for the lighteſt Pleats, and that between both for the other Parts.

With a worn Pencil ſweeten the Colour, ſo that the Folds may lie hard, and if you intend to make a Fringe, Imbroidery, or the like, add to them Shell, or Powdered Gold or Silver; mix your Minerals with Gum Water, having a fine Pencil to hatch or imbroider the Flowers; and touch the Fringes and other Imbroideries before you glaze, after this manner, *viz.* I imagine the changable Draperies ground to be Purple, and the light Yellow, then muſt I take a fine Pencil dipped in Varniſh, and thinly touch all the lighteſt parts of the Folds with Yellow Maſticot, if there be occaſion to repeat it, for it muſt be granted the Colour muſt be very thin with Varniſh.

When dry I muſt glaze all over with Lake, Smalt,

Smalt, or Ultramarine, once or twice with Varniſh, and ſo it muſt dry, and then I mix three degrees of Purple Colour, of Smalt, Lake and White, and lay them on as directed; and by theſe Meaſures fitting your Colours ſuitable to your Intention, you may paint any other coloured Drapery, which in this little Book I want room to particularize.

The curious Art and Myſtery of Japanning.

To be a Proficient in this Art ſeveral Matters are required, and theſe you muſt conſider as ſuitable, not only in Property, but Goodneſs, that your Coſt and Labour may not prove in vain.

As Two Strainers made of Flanel, moderately fine, or of courſe Linen, in the nature of a Tunnel, for to ſtrain your Lac Varniſh, and the other for your White Varniſh, and the firſt of theſe may ſerve for Lackers, when your Occaſion requires you to make them; beſides theſe there are required Two Tunnels of Tin for the ſame Purpoſe as before; Glaſs Bottles and Vials ſmall and great muſt be in a Readineſs, as to ſuit with the Quantities of Varniſh your Buſineſs requires you to uſe, and Gally-pots to put it in when you deſign to work; as alſo to mix your Blacks in, when they come to be ordered with other Things.

As for Tools, they are no leſs requiſite, for without them this Art would be inſignificant, and therefore to furniſh your ſelf with them, you muſt have Pencils according to the Greatneſs or Smallneſs of the Things intended to work on; thoſe for the Varniſh muſt be made of Camels Hair very ſoft, and are of various

Prices, as to the Largeneſs or Fineneſs; likewiſe drawing Pencils, placed in Swallow, Duck, or Gooſe Quills, as the Fineneſs or Largeneſs of the Stroke requires, and the longeſt haired Pencils are accounted the beſt in this Buſineſs; you muſt have in a readineſs a conſiderable Number of Muſſel-Shells to mix Colours and Minerals in, as the Occaſion ſhall require it. *Dutch* Ruſhes are another Material uſeful in this Matter, to ſmooth the Work before it is varniſhed, or take off the Knobs or Grittineſs from the Ground, or when it is varniſhed.

Tripoly is proper to poliſh this Work with when varniſhed, being reduced into fine Pouder, and ſifted; as for Linen Rags, you muſt be provided with them, both fine and courſe, to clear and poliſh this Work, alſo Olive Oil for a clearing; as many of theſe Things ſhall be directed hereafter, as they occur in due place, in the Work.

Several Things neceſſary to be uſed in this ART, &c.

Of Spirit of Wine.

This is of main uſe in Varniſhing, and if it be not properly qualified it will ſpoil the Varniſh, and not be capable, for want of Strength, to diſſolve your Gums, or make them ſpread, and ſo conſequently lie uneven upon the Work; and to know when this Spirit is ſufficiently rectified, put ſome of it in a Spoon, and put a little Gunpowder in, and if it burns out, blows up the Gunpowder, and leaves the Spoon dry, then it is a good Spirit, but failing in this, and leaving the Spoon moiſt when the Flame extinguiſhes, it is not fit for your Uſe.

Of

Of Gum Animæ, Gum Lac, and Gum Sandarack.

To chuſe theſe well, as for the firſt, take the moſt tranſparent, cleareſt and whiteſt, which is the beſt.

The ſecond alſo, called Seed-Lac, chuſe that free from Droſs, Sticks, or Duſt, large grain'd, and bright.

As for the third, take that which is large, and very white, caſting the leaſt Yellow, free from Duſt and Droſs.

Of Shell-Lac, White Roſin, Bole-Armoniack, and Venice-Turpentine.

As for the firſt, that is beſt which is moſt perſpicuouſly tranſparent, will eaſily melt, and draw out with your Fingers as fine as a Hair.

As for the ſecond, chuſe for your Uſe that which is the whiteſt and cleareſt.

As for the third, that is moſt fit for your purpoſe that is free from Grittineſs or Gravel, and is of a blackiſh Red Colour, commonly called French-Bole.

Of Gum Elemi, Gum Arabick, and Gum Capal.

As for the firſt, chuſe the hardeſt, and freeſt from Dirt and Droſs.

Chuſe the ſecond white and tranſparent.

As for the third, that is beſt for your Uſe that is whiteſt, free from Droſs, and the thick dark Stuff incorporated with it.

Of Gambogium, Isinglass, Benjamin, or Benzoin, Dragon's Blood, &c.

These are other Things necessary in this Art, and ought to be well chosen.

As for the first, the best is that of a bright Yellow, free from dirty Thickness and Dross.

Chuse as to the second that which is whitest and clearest, free from Yellowness.

As for the third, the best is that of a bright Red Colour, much like to clarified black Rosin, free from all Dross and Filth.

The fourth, when the best, is of a bright Red, free from Dross, it may be had, as the others, at the Druggists, but the Prices I set not down, because they generally rise and fall.

Of Silver Dust, Brass Dust, Green Gold, dirty Gold, Coppers, Powder, Tinn, &c.

The Silver Dust, the best is brought from beyond the Seas, and is known from the Counterfeit by being squeezed between your Finger and Thumb, giving a glorious Lustre, as indeed it does in the Work.

Brass Dust, by Artists called Dust Gold, is the best, made in *Germany*, the best is of a fine bright Colour, nearest resembling Gold, try it as the Silver Dust; as for the course sort, tho' it will work pretty well with Gold Size, yet it will not do so with Gum Water.

Green Gold, a corrupt Metal so called, is very good in this Work, for casting a fading Green Colour.

Dirty Gold is a corrupt Metal, casting a dark, dull, though silverish Colour, bearing pretty well a Resemblance to dirty drossy Gold.

Coppers

Coppers are three ſorts, Natural, Adulterate and Artificial; as for the Natural, being cleanſed, it may be ground without any Mixture.

The Adulterate is moſt fit for a Ground, and ſerves commonly to lay other Metals on, as in hatching or heightning Gold or Silver on; but the Artificial is of a higher and brighter Colour than either: There are alſo uſed in this Art, thoſe called Speckles, of Copper, Gold, and Silver, and divers other Colours differing in fineneſs, which may be work'd as the Artiſt fancies, either on the outſides of Boxes or Drawers, or on Mouldings, and may be purchaſed ready done.

Of Colours proper in Japanning.

Some of theſe are called tranſparent, on which Gold and Silver are to be laid, or ſome light Colour, ſo that by this means they appear in their proper Colours, lively and beautiful.

Of theſe, for a Green, are diſtilled Verdigreaſe; for a Red, fine Lake; for a Blue, Smalt; have to grind theſe on a Porphiry, or Marble-Stone. Grind with a Muller what quantity you pleaſe, with Smalt or Verdigreaſe, with Nut Oil, as much as will moiſten the Colours, and grind them till they are as fine as Butter, put then the Colours into Shells, and mix them with Oil of Turpentine till they become thin for uſe; lay them on Silver, Gold, or any other light Colour, and they will then become tranſparent, altering their lightneſs or darkneſs, according to that of the Metal or Colours that are placed under them; this for a curious Red, may be done with Lake, but then uſe drying Oil to grind them with.

If you design Figures on the Black of your Table or Boxes, as Trees, Birds, or Flowers, those may be done for White, with White Lead; for Blue, Smalt, mixing it with Gum Arabick Water, and mingle them as you please, to make them lighter or deeper; Flake White is a very pure White, but the other will do for ordinary Work, and you must use either of these with Smalt, or all other Colours that have not a Body of their own; you may for a Purple use Russet, fine Lake, and Sea Green, and it may be done with other sorts of Reds and Greens, and except transparent Colours, all must be laid with Gum Water.

Seed Lac Varnish, how to make it.

Your Ground Work is good rectified Spirits, of which you may take a Gallon, put it into as wide a necked Bottle as you can get, that the Gums may the better come out; then of the best Seed Lac add a Pound and a half, let it macerate twenty four Hours, or till the Gums are well dissolved, with often shaking to keep them from clogging together; then with Flannel Strainers strain it into a Tin Tunnel, placed in the Mouth of the empty Bottle, the Strainer may be made as before directed, and squeeze the Dross in the Bag, and throw it away as of no use; then let the Varnish settle, and pour it off into other Bottles, till it rises thick, and no longer; then strain the thick part, and settle that again, and keep the fine Varnish for your use, and this does as well, without the Danger of attempting to boil it, which endangers Firing the House, and the Party's Life.

Shell

Shell Lac-Varniſh, how to make it.

This in curious gloſſy Pieces of Work is not of value, but in varniſh'd Woods it ſucceeds: To make it, put to a Gallon of Spirit a Pound and a half of the beſt Shell-Lac, order it as the former, and tho' it has no Sediment, it is proper however it ſhould be ſtrained, to take away the Sticks or Straws that may be in the Gum, nor will it ever be fine and clear as the former, but turns in a few Days to Cloudineſs, yet it is fit for courſe Work, and much uſed.

White Varniſh, how to make it.

Take an Ounce of White Gum Maſtick, and an Ounce of White Gum Sandarach, Three Ounces of the beſt and cleareſt Venice Turpentine, Gum Elemi half an Ounce, Gum Capal an Ounce and a half, Gum Benjamin or Benzoin of the cleareſt half an Ounce, and half an Ounce of White Roſin, and the Gums being ſeparated in their Quantities provided, put the Roſin and Capal in a Glaſs Vial, with half a Pint of Spirits, that they may be diſſolved; and to the ſame End, in a Glaſs Bottle of Three Quarts of Spirits, put the Venice Turpentine, Animæ, and Benjamin, and in another Bottle the Gum Maſtick and Sandarack, in a Pint and a half of Spirits, then diſſolve the Gum Elemi in a Quarter of a Pint of Spirits, pouder very finely the Animæ and Benjamin, the better to diſſolve in the Spirit, and then pour them off into one large Bottle, let them ſtand to fine as the former, and then ſtrain them thro' a Linen Cloth gently, not hardly preſſing the Sediment, leſt you carry

the Grittiness of the Gums along with you, to injure the Varnish.

General Rules for Varnishing.

This is a Point nicely to be observed, or your Labour and Cost may be in vain.

1. If you chuse Wood that requires to be varnished, let it be exempted from Knots, very close grain'd, smooth, clean, well rushed, and freed from Greasiness.

2. As for your Colours and Blacks, lay them even, and exquisitely smooth, sweep all Roughness off with your Rush.

3. Keep your Work ever warm, but not hot, to raise Blisters, or crack it, which nothing but scraping off all the Varnish can amend.

4. After every distinct Wash let your Work be thoroughly dry, for Neglect in this Point introduces the Fault of Roughness.

5. After it is varnished let it lye by and rest as long as your Convenience will admit, and it will be the better.

6. Ever take care to begin your Varnish Strokes in the middle of the Table, or what you do it on, and not from one End to the other, and your Brush being planted in the middle, strike it to one End, then take it off and fix it to the place you began at, so draw or extend it to the other End, and so continue it till the whole Plane be varnished over, and beware you overlap not the Edges, which is when the Varnish hangs in Splashes or Drops on them, therefore to prevent it draw your Brush gently once or twice against your Gallypot side.

7. When you have proceeded so far as to come

come to poliſh, let your Tripoly be very fine; and the finer the Work, let it be ſtill the finer, and uſe fine Rags, keeping your hand moderately hard upon it, and brighten or poliſh one place as much as you intend, e'er you leave it and paſs to another, and always have regard, that you poliſh your Work as ſmooth as you intend at one time, but if your Conveniency will admit, let it reſt two or three days before you give the finiſhing Strokes after you have poliſhed it, but come not too near the Wood to make it thin and hungry, for then it will require another Varniſh, or remain to your diſcredit.

8. Take a ſufficient quantity of Tripoly at the firſt poliſhing, till it begins to come ſmooth, and ſo leſſen by degrees, and carefully obſerve there be no Scratches or Grating in it.

9. When you have a mind to clear up the Work, waſh off the Tripoly with a Sponge, and ſoak up the wet with a fair Linen Cloth, and with Lamp-black mixed with Oil, gently ſmear the whole Face of it, let no corner nor moulding of it eſcape, that the whole Piece may be freed, then with other Linen, and a hard Hand cleanſe it of that, and theſe things done there will be an admirable Gloſs.

For white Work, let your poliſhing be gentle and eaſy, do it nimbly, and clear it with Oil and fine Flour, and in exactly obſerving theſe Rules you will prove an Artiſt.

Of Black Varniſhing, or Japan.

Provide for this Imitation of Japan, a cloſe grained Wood, well wrought off, Ruſh it ſmooth and keep it warm by a Fire, but never

so near as to burn, scorch or blister your Work, then add to Seed-Lac Varnish, as much Lamp-black as will at the first strokes colour the Wood; do it three times, permitting it to dry well between every doing, and also Rush it well, then with a quarter of a pint of the thickest Seed-Lac, mixed with an ounce of Venice Turpentine, put in more Lamp-black, so much as may well colour it, and with this wash it six times, letting it stand twelve hours between the three first, and the three last Washings; then with the finest Seed-Lac just tinctured with the Black, do it over twelve times, letting it dry between every time doing, after which let it remain for five or six days before you polish it.

At the end of that time, take Water and Tripoly and polish it, having first dipped your Cloth in Water, and rub it till it gains a very fine Smoothness and Gloss, but do not rub so as may any ways wear off the Varnish, which cannot be easily repaired, then use a Rag wetted without Tripoly, and clear it up with Oil and Lamp-black, yet polish it not all at once, but let it have some days respite between the first and last Polishing, and at least three or four days.

White Varnishing or Japan.

This must be curiously done without any soiling, and therefore you must be cautious of letting any dirty thing come near, whilst you are doing it.

To begin this Work, scrape as much Flinglass as will make it of a reasonable thickness, or when dipping your Pencil into it, it will with

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a Stroke whiten the Body which has been paſſed over with a Bruſh, but let it be in neither of the Extreams, too thick or too thin, then mix it with your Size, whiten your Work over with it, and when dry, repeat the ſame, covering it from all manner of Duſt before it is Varniſhed; it muſt be whited three times, and dried between every one of them, ſmooth, and lay it as cloſe as you can to the Wood with your Ruſhes; then mix White Flake with your Size, only ſo that it may lie with a full and fair body on the Piece, and whiten your Work three ſeveral times with this, drying between each, then make it with your Ruſhes very ſmooth, but keep your diſtance from the Wood.

In the next place, take white Starch boiled in fair Water till it come to be ſomewhat thick, and when it is lukewarm, waſh over your Work with it once or twice, drying between whiles, and let it then ſtand twenty four Hours, then take the fineſt of the white Varniſh I have directed you to make, waſh your Pencil in Spirits, and waſh or anoint your Work ſix or ſeven times, and after thirty or fourty Hours do the like again, and if done with a dexterous Hand, a better Gloſs will be ſet on it than if it had been poliſhed; but if it miſs of that Gloſs, it is requiſite that you poliſh it; and in order thereto, you muſt accommodate it with five or ſix Waſhes of Varniſh more than the former, and it muſt continue to ſettle well about a Week before you poliſh it.

In Poliſhing, your Linen and Tripoly muſt be of the fineſt, being neat and careful in all this Operation, your Hand carried light and gen-

tle

tle, having your Cloth neither too dry nor too wet, and clear it up with fine Flour and Oil.

Kinglass Size, how to make it.

Break and divide an ounce of Kinglass into little pieces, put it into a glazed, clean, and well covered Pipkin, and let it for twelve hours soak in a pint and a half of fair Water, then place it over a gentle Fire, till it boil well at leasure, and when the Water is consumed to a pint, let it stand to cool leisurely, and then it will be a Jelly, and may be used in the White Varnish, and other Works, but make no more at a time than you will use, for in two or three days it will prove naught.

Red Japan, to make it.

The Reds are properly three, viz. the Common Red, the Deep dark Red, and the Light pale Red.

In the first Vermillion is proper, mixed with the thickest of Seed Lac, warm the Work and mix your Vermillion with the Varnish in a Medium, carry it over it four times, permitting it to dry as the former; and if your Reds be in a good Body and full, Rush it smooth, then with the ordinary Seed Lac Varnish wash eight times, and after twelve hours Rush it again, and then for a curious outward covering, give it eight or ten washes with Seed Lac-Varnish, and after five days Polish it, and clear it with Lamp-black and Oil.

Of the Dark Red.

The Common Red laid as before directed, deepen

deepen it with Dragon's Blood mix'd with your Varniſh, and when it has pretty good Colour go over it with Lac-Varniſh, which will much deepen and ſtrengthen the Colour, and in all Things elſe, as to poliſhing and clearing, do as in the former Red.

Of the Pale Red.

To do this grind white Lead with a Muller on a Stone, and when it is finely done, mix it with ſo much Vermillion as will make it a pale Red, mix Varniſh with them, and give the Work four Waſhes, and follow the Preſcription of the common Red, conſidering well that the after-Varniſh will heighten the Colour.

An Olive-Colour'd Japan.

Take Engliſh Pink Colour, grind it with common Size, and when it is like Pap, mix with it a Proportion of Lamp-black and White Lead, and work it as in other Japanning.

Cheſnut-Colour'd Japan.

To do this take Indian Red, or elſe brown Red Oaker, grind it well, and mix it with ordinary Size, then grind a little White Lead extraordinary well with the ſmall Size, mix with it Lamp-black, and ſo both with the Indian Red Oaker, ſtir, and well incorporate them together; if the Colour be too bright darken it with the Lamp-black, if too dark lighten it with White Lead, and ſo bring the Colour to your Mind, conſidering always that your Varniſh will heighten it.

With

With this waſh over your Work, let it dry, and repeat it till your Colour lye full and fair, ruſh it ſmooth, but not cloſe to the Wood, unleſs you deſign anew to begin your Work, and give it a ſecond Varniſh.

After it has ſtood three or four Days give it a Luſtre with Seed-Lac, and when dry fit it for poliſhing with White Lac Varniſh, and clear it with Oil and Lamp-black.

Blue Japan.

To do this grind White Lead very fine, add Smalt as finely ground, mix them with Iſinglaſs Size, the White Lead grind with Gum Water, let there be a Proportion of White and Blue, and mix them well to the Thickneſs of common Paint, go over your Work with it, and when it is well dry proceed ſo three or four times, till the Blue lyes with a fair Body, ruſh it ſmooth, and go over it again with ſtronger Blue, and when dry waſh it with the cleareſt Iſinglaſs Size, having a new Pencil for that purpoſe, then when it is dry warm it by the Fire, and go over it with a Pencil dipped in White Varniſh ſeven or eight times, and ſo let it continue for a Day or two, then waſh it as often as before, and ſo continue many Operations at intermitted times, for a Week at leaſt muſt paſs before you can well venture to poliſh it, and when it is poliſhed clear it with Oil and Lamp-black.

Note, That in no wiſe you mix your Colours with Iſinglaſs Colours too ſtrong, leſt when dried they be apt to crack, fly, and ſpoil the Piece, but when you lay your Waſh of clear Iſinglaſs, to keep your Varniſh from tarniſhing,

ing, or soaking into your Colours, then it is proper that it be of a full and strong body.

And thus much may very well suffice the Learner, to give him an insight into this excellent Art, from whence I shall proceed to other things useful and profitable.

Of Speckles, for the Adorning Japan'd Work.

Mix so many Speckles as you have occasion for, with ordinary Lac Gum-Varnish, so much, as when they are put into a Gally-pot, will fit them for working with a convenient Pencil, but not so thick as Colours, keep them stirring very well with a Brush, and generally warm by the Fire: This continue till you perceive the Speckles lie thick and even to your mind, so beautify them with three or four Washes of Varnish, mixed with Turpentine, and this, unless you intend to Polish, will be sufficient, but then you must give it after all this eight or ten Washings with the Prime Lac-Varnish, drying between whiles, and then Polish; and on this manner you may lay on all coloured Speckles; but Silver requires Seed Lac-Varnish, and the best white Varnish e'er it can be brought to a good Polish, but if not to be Polished, you may spare your Varnish.

To lay on Speckles in Japan Work, &c.

If you design to adorn your Work with Flowers, Rocks, or Garments, *&c.* Varnish the places intended with a fine Pencil, and through any small Sieve shake the Colours you design, whilst the Varnish is wet, and sweep up in Rock-Work all Speckles that straggle on the

the edges, with a new dry Pencil lodge them on the sides and top of the Rock, which sticking, will render the Work more beautiful, and give it a Shadow or Reflection.

This must be done with all diligence, and no intermission had till finished, till once covered, and being once dry, operate again, and so one upon another successively, to shape it to your mind; and in sweeping the Speckles, intermix not one portion of scattered parts with the other, that are of a different Colour, but every parcel in the proper station, to beautify the better: At first when laid, it will look dull and heavy, but the securing Varnish in a little time will add to it a pleasant, beautiful Colour; and so you may do Flowers, Trees, Garments, and many pleasant things to adorn your Work.

Wood, how to overlay with Gold or Silver.

To prepare this Work, you must be furnished with Parchment-Size, that is, the Cuttings of Parchment, boiled in fair Water to a jelly, and when strained and cooled, it will prove a strong Size.

When you are to use it, put as much as you shall want into an Earthen Pot, and make it hot, then as it is cooling, scrape as much fine Whiting into it as will colour it, mix them well with a clean Brush, and with this Mixture white your Wood or Frame, striking or jobbing your Brush against it, that it may the better enter into the Hollownesses of carved Work, then give it rest, that it may dry.

This done, melt the Size again, and put in more Whiting, to render it some degrees thicker,

er, and with this do over the Frames ſeven or eight times, or as you ſee there is a Neceſſity, and when it is dry open with a Gouge no bigger than a Wheat Straw the Veins in the Carved Work that the Whiting has ſtopped up, then with a fine wet Rag and your Finger, carefully ſmooth and water, plain it over, and ruſh it ſmooth when dry, if Neceſſity require it; and in this Condition it will well receive your Gold or Silver Size. But before I proceed I ſhall teach you to make theſe Sizes.

The beſt Gold Size at preſent in uſe.

Take an equal Quantity of the beſt *French* and *Engliſh* Bole-Armoniack, grind theſe fine on a Marble Stone with fair Water, then ſcrape into it a little Candle-greaſe, incorporate and grind all theſe well together, then mix a little Quantity of Parchment Size with a double Proportion of Water, and the Buſineſs is done.

The beſt Silver Size in uſe.

Grind fine Tobacco-pipe Clay very ſmall, mix with it as much Lamp-black as will turn it of a light Aſh Colour, and to theſe add bits of Candle-greaſe, grind them very fine together, a Mixture of Size and Water, and try theſe on the Corner of the Frame; if it be rough in burniſhing put more Oil or Greaſe, and as near as you can bring it to a due Temper, that it may work well.

To Size your Frames, or other Matters.

To do this make the Size Blood warm, and with

with a fine Bruſh ſtir it very well, till it is ſomewhat thin, go over the Frames with it twice or thrice, yet touch not the hollow Parts of the deepeſt Carvings, where the Gold cannot conveniently be laid, for the Yellow Colour nearly reſembling firſt laid on, the Fault will not ſoon be diſcover'd; let it dry four or five Hours, and then try the Gold if it will burniſh on it, if not alter the Size, and do it over again.

To lay on the Gold, in order to burniſhing.

Let your Frame, or other Matter intended, be ſet on an Eazle, place the Leaf Gold on a Cuſhion, to be held in your Left Hand with the Pallat and Pencil. You muſt for this Work have a Swan's Quill Pencil, or a larger of Camels Hair, if the Work require it, dip it in Water, and wet no more of your Frame at a time than will take up three or four Leaves, make your beginning at the lower End, and ſo proceed upwards, laying on whole Leaves, or half ones, as it requires, then wet ſuch another part of your Work, and lay on the Gold with your Pencil, or Cotton, gently preſſing it very cloſe; and having gilded the upright ſides, turn the Frame, and proceed the ſame way with the Ends, then ſurvey the Spots and Places that are omitted, and cut ſmall Parts of Gold to cover them, when wetted with a ſmaller Pencil than before, when it is ſo finiſhed let it ſtand till the next Day that time you leave off.

To burniſh the Gold Work.

Take a Wolf or Dogs Tooth, if you cannot get Aggets or Pebbles formed into the ſame Shapes,

Shapes, and burniſh ſo much of the Work as you deſign, leaving the Ground of the Carving untouch'd, and ſome other Parts, as you ſee beſt convenient, which, in reſpect of the burniſhing, being rough, the better ſets it off; that which is omitted to be burniſhed muſt be matted, or ſecured with Seed-Lac-Varniſh, or Lacker; if you deſign it a deeper Colour, then muſt your Work be repoſſeſt, or ſet off with Lacker, mixed with Saffron and Dragons Blood, or the Colour called *Ornator*, and with a fine Pencil dipped herein touch the Hollowneſſes of the Carving, and the Veins of the Foldages or Leaves; if you fancy it is not deep enough, you may by a Repetition make it ſo, and the Work is done.

To lay on Silver Size.

Warm the Silver Size that is newly ground and mingled well with weak Size, as you did the Gold Size, do it once or twice, and let it dry, and try the Leaf Silver, if it will burniſh on it, it is prepared for the Work; but if it will not, make an Alteration in the Size, and for the reſt lay on the Leaf Silver, and do as you did by the Gold, and it will anſwer.

Note, as farther Rules, and ever obſerve them.

1. Let your Parchment Size be ſomewhat ſtrong, keep it not long, leſt it ſpoils.

2. Grind no more Silver or Gold Size than juſt you have preſent Occaſion for.

3. Ever keep your Work clean from Duſt, after it is ſized and gilded, or elſe in the burniſhing it will be full of Scratches.

4. Do not whiten or burniſh Gold Size in hard froſty Weather, for then the Whiting will be apt to peel off, and the Gold flaw.

The

The Art of Gilding Metals.

To prepare the Gold.

Take Ducket or Leaf-Gold what Quantity you deſire, obſerve to beat the Ducket very thin, and put this Gold, with as much Quickſilver as will juſt cover it, into a Gallypot, where let them continue half an Hour, where immediately after the Mixture ſtir them with a Stick, then ſtrain them thro' a piece of Leather, ſqueezing with your Hand till you have forced out as much Quickſilver as you can induſtriouſly do, ſo that what remains in the Leather looks more like Silver than Gold, yet this only muſt be employed in Gilding after the following manner.

To Gild with Gold, Silver, Copper, Braſs, Princes Metal, &c.

Bruſh firſt your Metal well with a Wire Bruſh, wet it with Water or Beer, and bruſh on till the Dirtineſs or Filth be quite removed, that the Gold may more cloſely join it, prepare then your Quickſilver, by mixing it with a little *Aquafortis* in a Vial, three or four Drops of the *Aquafortis* to an Ounce of the Quickſilver, quicken your Work with it, *viz.* rub it over with a Rag, or your Finger, till it appears all ſilver'd, or touch'd. This done,

Take your prepared Gold, and with a ſmall Knife, or Iron Tool proper to the Purpoſe, ſpread, or overlay the whole Piece, omitting no part, give it two or three little Heats before you give it a thorough Heat, ſo that with a Hair

Bruſh

Brush like a Comb Brush, you may dab and spread your Gold, these little heats making the Quicksilver more ready to comply; then give it the thorough Heat, which will compel the Mercury or Quicksilver to evaporate or fly away; then take it from the Fire, and with a scrub Brush, untouched with Quicksilver, cleanse it as at first; if you perceive any untouched Spot of Quicksilver, the Gold must be laid on it again, when it is cleansed with a scratch Brush, and after this manner you may heighten its Colour if you see it necessary.

To heighten the Colour of Gold.

Take an equal quantity of Salt, Argol and Brimstone, mix them with as much fair Water as will cover the gilded Metal when put into it, boil them well, and tying your gilded Metal in a string, plunge it in for a little Space, often plunging, and looking as often on it as you draw it out, and when the Colour is heightened to your Expectation, dip it in cold Water, and the Work is done; you may in the foregoing manner double or treble Gild, till the Gold enriches it to a lasting Thickness and Colour.

To Counterfeit Tortoise-shell.

To do this well, let the Wood you intend to work on, be very close grained, clean and smooth wrought off, as Pear Tree, or the like; but if rough grained, you must prime it with Whiting, as you are taught in Black Japanning, for coarse grained Woods, Rush it smooth and go over it with Seed Lac-Varnish, the breadth of a Silver Leaf, which take up with Cotton, and

and lay on it moist, as close as may be; then wash again, and place on another Leaf of Silver, and so continue till the Wood is overspread with Silver, and when dry, sweep off all the loose Silver with a Hair Brush, then finely grind Collins Earth, and mix it with Gum Water or Common Size, and with this, having added more Size or Gum Water than it was ground withal, Spot or Cloud the Ground-Work, having a fine, true, natural Shell by you to imitate, and when this is done, you will perceive several Reds, lighter and darker, appear on the edges of the Black, and many times lie in Streaks on the transparent part of the Shell; to imitate this finely, grind Sanguis Draconis with Gum-Water, and with a fine Pencil draw those warm Reds, flushing it in about the dark places more thick, but fainter, thinner, and lesser of Colour towards the lighter parts, so sweetening it, that it may in a manner lose the Red, being sunk in, in the Silver, or more transparent parts.

When it is done and dried, give at least six washes of Seed Lac-Varnish, and when it has continued twenty four hours, Rush it gently, and when it is smooth, and fit for the second Operation, grind Gamboglum very finely in an equal small quantity, put these into as much Seed Lac-Varnish, as will serve to wash it another six times, then let it stand twelve hours, and give it the third Varnishing, and with the last Mixture wash it so often, that the Silver is changed to a Golden Colour, and the Work is done.

To Dye Wood a curious Red.

The Wood that takes this Colour must be very

ry white, and to begin it, put a handful of Allum in a moderate Kettle of Water, and caſt your Wood into it, and when well ſoaked, take it out, and put in two handfuls of Raſped Braſil-wood, and when that has boiled well, put the Wood in again for a quarter of an Hours boiling, and it will take the Colour.

To Stain a Curious Yellow.

In this caſe, take the knotty Aſh or Bur, that is very white, knotty and curled, Smooth and Ruſh it very well, and when it is well warmed, waſh it over with a Bruſh dipped in Aquafortis, then hold it to the Fire till it deſiſts to ſmoke. Ruſh it again when dry, then Poliſh it, and Varniſh it with Seed-Lac, and it will be of a curious Colour, not inferiour to any Outlandiſh Yellow Wood; and if you put filings or bits of Metal, as Copper, Braſs, *&c.* each Metal will produce a different Tincture.

To Stain or Dye Wood Black.

Boil Logwood in Water or Vinegar, and two or three times Bruſh or Stain your Wood with it when very hot; then take Nut-Galls and Copperas, bruiſe them well, and boil them in Water, and with it Waſh or Stain your Wood ſo often, till it be a perfect Black; or rather ſteep it in the hot Liquor if you can put it in, and the Dye will penetrate the better.

To Dye or Stain Wood for Inlaying of Flowers, or other things in Cabinets.

Get moiſt new Horſe Dung, and ſqueeze out the moiſture through a Cloth, put it into ſe-

veral small Vessels fit for your purpose, and dissolve Gum Arabick, and Roach Allum, each the quantity of a Walnut, and with these mix Reds, Greens, Blues, or any Colour that is suitable to the Work, stir them often three or four Days, then take your Wood, particularly Pear-Tree for White, cut it into the thickness of Half Crowns, or so much as will suffice any Inlayed Work, and in a Square or Length, according to your desire, boil up the Liquors or Colours very hot, and put in the Wood till the Colour has well taken; some indeed you may take out sooner, that the Colour being less strong, may the better agree with your party-coloured Flowers, Shading and the like.

To Dye or Stain Ivory, Bone, or Horn, Red.

Soak fine Lime about twelve Hours in fair Rain Water, then pour off the Water well from the settling through a Linen Cloth, and to each Pint, put half an Ounce of Rasped Brazil Wood, and having boiled your Materials in Allom Water, boil it in this, and it will give a curious Tincture.

To Stain Horn, Bone, Wood or Ivory, Green.

Prepare your Materials by first boiling in Alom-Water, then grind the common thick Verdigrease, or Spanish Green, a moderate quantity, adding half as much Sal Armoniack, and put them into the sharpest Wine Vinegar, as also the Materials you intend to stain, and keep them there hot till they have taken a good Tincture.

To

To Stain or Dye Horn, Box or Ivory, a curious Black.

To do this, put ſmall pieces of Brazil-Wood into Aquafortis, and ſo continue them till they appear green; then waſh well your Materials in them, and boil Logwood in Water, into which put them whilſt they are warm, and in a little time the Ivory, *&c.* will be of a curious Black, ſo that being poliſhed, it will look like Ebony or Japan; and if you would have any part for Flowers, or the like remain white, draw them before ſtaining with Turpentine Varniſh, and the Black will not touch them, and afterward you may hetch them, and clear up with Oil and Lamp-black.

To Stain Skins Green.

Bruiſe a good quantity of the Leaves of Nightſhade very well, diſſolve in the Juice well ſtrained out, about two Ounces of Allum, then put in half an Ounce of Verdigreale, ſuffer them to ſtand over a very gentle Fire twenty four Hours, then warm, dip in a Bruſh, and ſtrike over your Skins, let it dry, and repeat it till it has taken a pleaſant Green.

An approved way to Colour White Leather.

Theſe Skins muſt be hung in Lime or Chalk Water, that the Wooll or Hair may be entirely ſtripped off, and they become ſupple, ſtretch them ſmooth on Tenters, bruſh them over with Allum-Water very warm, and ſo tincture them with the Colours you deſign, ſuitable to your purpoſe.

To put a Curious Black on Leather.

Take two Pound of the inward Bark of an Old Elder, the like quantity of the Ruſt or Filings of Iron, put theſe into two Gallons of Rain Water, and cloſe them tight up in a Veſſel, and when they have ſtood about ſix Weeks, put in a Pound of Nut-Galls well bruiſed, a quarter of a Pound of Copperas, let them ſimmer a conſiderable time over a Fire, and after Twenty four Hours ſtanding, and often ſtirring, pour out the Liquid part, and go over your Leather with it warm, and it produces a curious *German* Black.

To Colour Leather a bright Red.

Dip your Leather firſt in Allum-Water, and rub it well therein; then take ſtale Urine, boil it till it is half conſumed, ſcum it well, and put to it an Ounce of the beſt Lake, Raſped Brazil Wood two Ounces, and an Ounce of Allum; add to theſe half an Ounce of Sal Armoniack, ſtir them well over a moderate Fire two Hours, pour off the Liquid part, and bruſh over your Skins with it, till it takes a good Tincture, remembring ever to let the Skins in all Colours dry well between each going over with your Bruſh, and your Expectation will be anſwered to a very conſiderable Advantage.

A curious French *Yellow for Skins.*

Take Wood-Aſhes and Chalk, of each a like quantity, and when you have made a good Ley with Rain-Water, ſtrain out the fineſt part, and ſet it over the Fire, then put in a ſufficient quantity

quantity of Turmerick well bruiſed or beaten to Powder, and as much Saffron as may give a lively Tincture, let it ſtand over a moderate Fire, but not boil, till it becomes pretty thick, and being warm, Colour the Skins with it.

For a deep Blue, or Purple.

Strain out the Juice of Elder-Berries, put to two Quarts, an Ounce of Allum, half an Ounce of Smalt or Indico, ſet theſe over a gentle Fire, and when warm, bruſh your Leather over with this Compoſition.

For a Crimſon Velvet.

Diſſolve Cake-Soap in fair Water, and Bole-Armoniack, each three Ounces, place them over a gentle Fire till the Liquor grows clammy, then put in a little handful of Grains of Cochineal, two Ounces of Red Lead, an Ounce of Lake, and a quarter of an Ounce of Vermillion, a little piece of Indico, mix theſe well over a gentle Fire, till they are the thickneſs of the glare of an Egg, then go over the Skins with a ſoft Bruſh dipped into it, till the Colour ariſes to your Mind.

To Imitate the Turkey-Blue.

Take two Ounces of Smalt, a quarter of a Pint of Red Wine, half a Pint of Vinegar, an Ounce of White Starch, incorporate theſe over a gentle Fire, till they come to a moderate thickneſs, then ſoak the Skins with Allum-Water; add to the Compoſition a Pint of Water, wherein Gum-Arabick has been diſſolved, and

ſtir it well, go over the Skins three times, drying them between whiles, and when well dryed, poliſh them over to render them gloſſy.

For a Light Green.

Take the Juice of the Herb called Horſe-Tail, add to it a little Alom, Verdigreaſe and Copperas.

To Cover or Dreſs Skins with Gold or Silver.

Grind brown Red with a Muller on a Marble Stone, add to liquidate it a little Water wherein Chalk has been diſſolved, and lightly go over the Skins till they look whitiſh, and before they are dry, lay on the Leaf Gold or Silver, a little lapped one over another, that no Space be found wanting, and when they ſtick well to the Leather, and are dry, poliſh them over with ſmooth Ivory, or a Horſes Tooth, and it will give a very glorious Luſtre; the Silver you may lacker over with Lacker Varniſh, and change it into a Golden Colour.

Or another way, take Glare of Eggs, or Gum Water, bruſh the Skins over with it, and lay on your Leaf Gold or Silver, doing as before.

To make Skins look Shining, without Silver or Gold.

Take Gum-Water, the Glare of Eggs, and the Powder of Antimony, grind and mix them well together, and the Skins being dry, lay it on them with a Bruſh, three or four times, letting them dry every time between; then burniſh them

them over, and they will have a curious Gloſs like Silver, which tinctured with Lacker Varniſh, will produce a fading Gold Colour.

To Dye Briſtles a Red Colour.

Take half an Ounce of Allum, a quarter of an Ounce of Vermillion, and an Ounce of Raſped Brazil-Wood; put theſe into a pint of Vinegar, and boil them moderately thick, and dip in the Briſtles when it is very hot, and continuing there a time, they will be a fine Red, you may make larger quantities of the Liquor, with Ingredients proportionable, and thus Dye Feathers.

Feathers or Briſtles Green.

Take Verditer and Verdigreaſe, each an Ounce, put them into a Pint of Water, ſoak the Feathers or Briſtles in hot Water, and then put them into this Liquor boiling hot, and let them remain till they have taken a good Colour; and ſo according to the Complexion of your Dyes, you may colour them this way any Colour.

For Blew, let your Dyes be Indico and Biſe.

For Black, Galls and Logwood, with a little Copperas.

For Purple, Lake and Indico.

For Carnation, Smalt and Vermillion.

For Yellow, Yellow Berries and Saffron, diſſolving a little Tartar in your Water.

For Orange, Turmerick and Red Lead, and ſo of any other Colours you fancy.

Of Dying Silks, Stuffs, Cloths, Thread, and other things, of divers curious Colours.

To Dye Silk a Sanguine Colour.

Take a Pound of Green Weed, and as much Allum, bruiſe them, and pour on them fair Water, and half a Pound of Raſped Brazil, ſet them over a gentle Fire, well to mix them, then put in the Silk, ſuffering it to ſeeth therein then, and ſo continue it, by ſtrengthening your Dye, and dipping till you perceive the Colour has taken well; after that, rinſe it in Leys, Wood-Aſhes, or Oak-Bark, and ſo clear it with fair Water, dry it, and preſs it.

To Dye Silk a deep Carnation.

Take White gall and Allum, the Herb called Foli, well dried; to the quantity of a pound, two Ounces of Spaniſh red, four of Indian-Lake, boil them in fair Water over a gentle Fire; and when they come to height of tincture, dip your Silks into them, and let them have good dippings three or four times, and the Colour will take very well.

To Dye Silk Quoins Red.

Let theſe be ſteeped well in Allum-Water, then give them a gentle heat, adding in the heating Brau-Water, a Pound and a half of Green

Green weed, ſo heat it up, and put the Silk into it, but let it not ſeeth, then rinſe it in Leys of Wood-Aſhes, after that in Water, then put in your Logwood Raſped or in Powder, and ſo heat it up a ſecond time, and ſo in thrice well dipping, the buſineſs will be accompliſhed.

To Dye a curious Yellow.

Take Wood, the Stalks, Seeds and Leaves, and lay them to ſoak in Wood-Aſhes Leys three hours, then ſeeth it till it is ſufficiently ſodden, and put it into a mixture of hot Water and Urine, ſo heat it up, and ſtrain the Liquid part through a Sieve or Strainer, adding Verdigreaſe, and ſo boil it up with the Ley already ſod, ſtirring and well mixing the Liquor about three Hours, and when it is very hot, dip three times.

To Dye Silk a Roſe-Red.

Take to every four yards and a half you intend to Dye, a pound and a half of Nutgalls, boil them in fair Water unbruiſed two hours, ſhift the Water, then put in the Silk or Linen, letting it ſoak four hours, then wring it dry, and heat it in fair Water, wherein Alom has been diſſolved, then put in half a pound of Braſil Powder, and a pound of Green-weed, and ſo by dipping in gentle heats, the Colour will heighten.

A good Black Water, for Silk or Cloth.

Take an Ounce of Lamp-black, half a pound of Nutgalls, bruiſe the latter, and put them in-

to a Pottle of Water, with a Handful of the Filings, or Ruft of Iron, heat them up, adding a quarter of a Pound of Copperas, seeth it to a third part consumption, then add half a Pint of Gum Water, and it will not only be for present use, but keep long, and be a very good Black.

To Dye Purple.

In this case if you dye Silk, you must take to each pound of it an ounce of Allom, and a gallon of Water, dissolving the Allom therein over a gentle Fire, then put in the Silk, and let it continue there about four Hours, then take Lake and Indico, each a quarter of a pound, a quart of Urine, then adding a little handful of Cochineel, heat them up into a Dye, and dip your Silks or fine Stuffs into it as usual.

To Dye a very fair Blue.

Take any Silk, Stuff, or Cloth White, and soak it in Water, that done, wring out the Water very well, and add two pound of Woad, a pound of Indico, and three ounces of Alom, give a gentle Heat in fair Water, and so dip till you perceive the Colour to take well.

Carnation.

To make this a curious right Colour, take dried Purper, soak it in Man's Urine for a Night, then take what you have to Dye, and soak in Alom Water twice, seeth the Purper in fair Water, and then set another Vessel to receive the Liquor, and dip therein.

For

For a pleaſant Light Red.

Boil two gallons of Wheat, and an ounce of Alom in four gallons of Water, ſtrain it thro' a fine Sieve, diſſolve more Alom half a pound, and as much of white Tartar; add three pound of Madder, to perfect the Colour, and put in your Stuff, Cloth, *&c.* at a moderate heat.

Black for Velvet, &c.

Take half a pound of Copperas, a gallon of Smiths-Water, two pound of Galls, burnt Ivory, Oak Bark, and Shoomakers Black, each an ounce, well ground, two gallons of fair Water, mix them well, and ſet them in the Sun or other warm place a Month, often ſtir it, and at a moderate warmth dip your Velvet, or other things deſigned for deep Blacks.

To make Red Water for Silk or Woollen, Violet, Green, Azure, or Yellow.

Take two gallons of fair Water, four ounces of Braſil, and being half conſumed in heating up, remove it from the Fire, put in an ounce of Grains, a quarter of an ounce of Gum Arabick, with a quarter of a pound of Alom well bruiſed, and having ſtood all Night, it may be well uſed in the Morning.

To Dye Woollen, Yarn, or Wooll.

Take two pound of Wood, to every four pound of Yarn, *&c.* and two gallons of Water; put more, two handfuls of Wood Aſhes, and when it ſeeths, put in the Yarn or Wooll,

and let it continue half an hour, or ſomewhat more, then wring it, and put it in again, and let it ſeeth as long as before, and if it were a brown Blue, it will be a dark Green, or of a white Yellow colour.

To make Bran-Water.

This is very neceſſary in Dying, and therefore you ought to know how to prepare it; do it with half a peck of VVheat-Bran, to two gallons of fair VVater, over a gentle fire, and half a pound of bruiſed Alom; ſuffer it to ſtand about a VVeek, with often ſtirring before you uſe it.

To make grey Florrey.

Let the Florrey be ſoked twenty four hours, then wring it through a Cloth, and take Aſhes of Vine Sprays, and with them make a Ley, and upon a Table ſpread the Florrey, about two hours, put the Ley into three Veſſels, and ſhift the Florrey out of one into another, and before you dip, put Vinegar in, and the Florrey will be well ordered, and your Colour good.

To Dye Linen with Crampenade.

To three Ells of your Linen, uſe a pound of the Crampenade, and a gallon and a half of Water, and ſo to a greater quantity proportionable; let it ſtand over a fire till it begins to ſeeth, put in at that time two ounces of Galls, and then your Linen, and when you take it out which muſt be often, wring it, and put it into Allom-water; but if you would have the Co-

lour

lour darker, it is requiſite to have a Ley of unſlacked Lime, or Chalk Stones.

To Dye a good Red in Linen, Thread, or, Cloth.

Soak a pound of Sam-fleur twenty four hours in two gallons of Water, ſuffering it to heat over a gentle fire, add two Ounces of Vermillion, half a pound of Raſped Braſil, and an ounce of Allom, diſſolved in a pint of fair Water, and dip, and order your materials as in other things.

Thus Reader, have I given you a good Inſight into the Myſtery of Dying Silks, Stuffs, Cloths, and other things relating thereto, which may by practice prove advantageous.

The Art of Perfuming.

To make Eſſence of Hypocras.

Take a ſtrong Glaſs Bottle, and put half a pint of Spirit of Wine into it, add an ounce of Cinnamon, half an ounce of Cloves, a groſs of Ginger, and as much Coriander as you can hold with your Fore Finger and Thumb well beaten, three or four Grains of Black Amber, or Ambergriſe beaten in a Stone Mortar, ſtop the Bottle very faſt, and ſet it on Sand, expoſing it to the Sun for a Month: The Bottle in this Caſe muſt not be full, nor ſtand out in the Rain; this is a curious and wholeſome Perfume.

Eſſence

Essence of Amber.

Put a pint of Spirits of Wine into a strong Glass Bottle, and beat in a very small Stone Mortar, a gross, or the eighth part of an ounce of black Amber, or Ambergrise, put it into the Spirits, with half a gross of the Bladder of Musk very small, so stop it close, and set it for a fortnight as the former, shaking it two or three times a day, when the Sun shines hot upon it, but fill not the Bottle full, lest the Spirits break it; and then let it stand still another fortnight, and it is done.

Rosa Solis, or perfumed Liquor.

Put two pints of Water, and two pounds of Sugar in a Copper Pan over a gentle Fire, and let them boil to the consumption of a fourth part, then put in two Spoonfuls of Orange-Flower Water, then throw in the White and Shell of an Egg, well beaten with a Whisk, and stir the Egg well in the Liquor with it, take it off when it boils, and strain it through a Bag several times, and when you percerve it well clarified, pour in of the best Brandy, and then Essence of Hypocras or Amber, and you will have excellent perfumed Solis.

Angel-Water.

Put into an Earthen Pot a quart of Orange-Flower Water, a quarter of a pound of Benjamine, two ounces of Storax, a quarter of an ounce of Cloves, half an ounce of Cinnamon, two or three bits of Calamus, set the Pot on a gentle Fire, to the Consumption of a fourth part,

part, add a Bladder of Muſk, then let it cool, ſtrain it well from the Droſs, and put it up for uſe.

Milleſleur, or the Water of ſeveral Flowers.

To do this, put in a ſtrong Glaſs Bottle a pint of Angel-Water, then in a little Mortar beat twelve Grains of Muſk, then put ſeveral Flowers of various Scents, more of the weaker than of the ſtronger, that there may be a Temperature, and allay them with that Water, and when well infuſed, pour it off into a Bottle, and keep it well cloſed for uſe.

Orange Flower Water.

To make this well, infuſe two pound of Orange Flowers in a quart of Water three or four Hours, and ſo diſtil them in a cold Still: This Water is good for cleanſing Snuff, making Angel-Water, or perfuming Waſh-Balls or Skins.

The Queen of Hungarys-*Water.*

Put a quart of the beſt Spirit of Wine into a ſtrong Glaſs Bottle, and two large handfuls of Roſemary Flowers, a handful of Thime, and half a handful of Sweet Marjoram, the Leaves only, and as much of Sage, keep the Bottle cloſe ſtopped, and expoſe it to the Sun a Month, and then you may diſſolve the bigneſs of a Bean of Orcanat, bruiſing it with a little Spirit of Wine, and put it into the Bottle; then expoſe it four or five days more to the Sun, and it will be of a fine red Colour, and a curious Scent.

Paſtils

Pastils or Perfumes, of divers kinds.

Pastils of Roses made into Wax-Candles.

Take a pound of the Dregs of Angel-Water, beat them when dried very fine, and search them through a Hair Sieve, then put to them a handful of the Leaves of Roses newly gathered, dissolve Gum Adragant in Rose-Water, and beat the whole long together, to well Incorporate it, then rowl up pieces as big as your Finger taperwise, and when they are dry they will burn like a Candle, and give a very curious scent.

Perfumed Pastils for Beads or Medals.

Dissolve Gum-Adragant and Arabick in Millefleur Water; and put into it Marchal-pouder as much as will stiffen it into a Paste, rub the Moulds you cast them in with Essence of Flowers, and the Beads or Medals will be of a curious Brown or Coffee colour.

Another.

Take of Frangipan and Cyprus Powders, each a like quantity, put them in Gum, wherein Millefleur-Water is the greater part, and make them into Pastils.

To make a Liquid Snuff, excellent for the Cure of the Head-ach, or against Apoplectick Fits; a rare Secret.

Take Distilled Betony-water a pint, half a pint of Rosemary-Flower-Water, infuse in these

theſe four ounces of the beſt *Virginia*-Tobacco, finely ſifted into Powder; let them ſtand warm by the Fire, or in the Sun twenty four hours, then ſqueeze out through a very fine clean Cloth the liquid part, Scent it with a little Ambergriſe, and a very ſmall quantity of Muſk, drop into it three or four Drops of Chymical Oil of Nutmeg, or Cinnamon, ſhake it well when the Settlings are taken off, and keep it in ſmall cloſe Vials for uſe, ſnuffing or ſpirting up a very ſmall quantity at a time into your Noſtrils; the Scent of it without ſnuffing up, remedies an ordinary Head-Ach.

Coſmeticks, or Curious Receipts for Beautifying the Face, Hands, or any Part of the Body.

Benjamin Water, an excellent Beautifier.

Take a pint of good ſtrong Brandy, a pint of Spirit of Wine, half a pound of Benjamine, and a quarter of a pound of Storax, an ounce of Cinnamon, and half an ounce of Cloves, and four Nutmegs; beat the Spices and Benjamine, and putting them into the Liquids, ſtop them up cloſe in a ſtrong Glaſs Bottle, and let it ſtand upon Sand in the Sun, in the heat of Summer a Month, and then pour it off, and clarifie it.

This cleanſes the Skin of Morphew, Tann'dneſs or Sun-burning, and cauſes a delicate Complexion, as does the Queen of *Hungary*'s-Water, which I have already taught you to make.

To

To prepare Spunges for the Face.

Having chose the best and smoothest Spunge, and cut off what is superfluous, soak it, changing the Water till it looks clear, then dry it, and dip it in Orange Flower or Angel Water, pour over it a little Essence of Amber, then squeeze it but a little and let it dry, and it will be for your purpose, in Cleansing and Beautifying the Skin, far beyond the use of Linen.

To cause a Fair Clear Complexion.

Distil Fumitory, Rosemary-Flowers, and Scabious, each two good Handfuls in a Pottle of White Wine, and a Quart of Dew, gathered off the Grass or Corn, with clean Napkins and Handkerchiefs, and so wrung out; keep it close stopped in Glass Bottles, and wash the Face and Hands with it, as there is Occasion.

To cause a Fresh-coloured Complexion.

Take Oil of Myrrh an Ounce, three Drops of Oil of Sulphur, an Ounce of the Oil of Sweet Almonds, mingle them well, and anoint the Face going to Bed, and the next Morning take it off with Benjamine Water.

To make a Clear Pale Complexion.

Distil the Blossoms of Pease, Beans and Peaches, each a good Handful, in two Quarts of Whey, and wash the Face with it.

A Pomatum to Refresh the Complexion, and take off Pimples and Redness.

Take half a pound of the Leaf of Hogs Fat, work it well in fair Water till it is very white, then put it into a new Earthen Pan, put in a quarter of an Ounce of Copperas, two Pippins cut in pieces without paring, mix an ounce of the Oil of sweet Almonds, and strain it through a Linen Cloth into clean Water, and make it into a Pomatum, and with it anoint the Face.

To take away Freckles.

Take the Gall of a Cock, an ounce of Rye-Meal, a quarter of an ounce of the Juice of Hemlock, an ounce of Oil of Turpentine, make them into an Ointment, and anoint the Freckles with it, and in a little time they will disappear.

A Pomatum to Plump the Lips and Cheeks.

Take an ounce of fresh Butter, and as much Virgins-Wax, set them over a gentle Fire, and throw in black Grapes, bruise them with a Ladle; then put in two ounces of Orange-Flower-Water; bruise in a Porringer, the bigness of a Bean of Orcanet, allay it with a little Orange-Flower-Water, put them into the Pomatum, and work them up together with a Spoon, and put it up for your use.

A Liquid Paste, to wash the Hands without Water.

Take of bitter Almonds a pound, bruise them well

To prepare Spunges for the Face.

Having chose the best and smoothest Spunge, and cut off what is superfluous, soak it, changing the Water till it looks clear, then dry it, and dip it in Orange Flower or Angel Water, pour over it a little Essence of Amber, then squeeze it but a little and let it dry, and it will be for your purpose, in Cleansing and Beautifying the Skin, far beyond the use of Linen.

To cause a Fair Clear Complexion.

Distil Fumitory, Rosemary-Flowers, and Scabious, each two good Handfuls in a Pottle of White Wine, and a Quart of Dew, gathered off the Grass or Corn, with clean Napkins and Handkerchiefs, and so wrung out: keep it close

Take bruised Coral and Pumice Stone, finely sifted, and by rubbing the Teeth well with them, they will be as white as those of Infants.

To make Hair Grow and Curl.

Take the Ashes of Fern-Roots a handful, as much of those of the Vine, and make a Ley with them in Ox Urine, boil in it a handful of the Tops of Hyssop, and wash the Ends and Roots of the Hair with it, or the Bald place, and the Hair will immediately Grow and Curl.

To

A Pomatum to Refreſh the Complexion, and take off Pimples and Redneſs.

Take half a pound of the Leaf of Hogs Fat, work it well in fair Water till it is very white, then put it into a new Earthen Pan, put in a quarter of an Ounce of Copperas, two Pippins cut in pieces without paring, mix an ounce of the Oil of ſweet Almonds, and ſtrain it through a Linen Cloth into clean Water, and make it into a Pomatum, and with it anoint the Face.

To take away Freckles.

Take the Gall of a Cock, an ounce of Rye-Meal, a quarter of an ounce of the Juice of Hemlock, an ounce of Oil of Turpentine, make them into an Ointment, and anoint the

Burn a pound of Roach-Allum, and finely pouder it, add to it half a pound of the Root of an Herb, called Florence-flame, then a new laid Egg, and two pound and a half of Cake Soap, bruiſe and mix them well together, that they may be made up with fair Water into Balls; then firſt waſh the place ſtained or ſpotted with fair warm water, ſcrape the Soap moiſt on it, and waſh it out, and in three or four times thus doing, the blemiſhes will diſappear.

To take Spots out of Linen.

Take two ſpoonfuls of the Juice of an Onion, and as much of Lime-Juice, wet it two or three times, as often drying it by a Fire, waſh it immediately in a good Laver, and it is done.

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well in a Stone Mortar, till no Lumps remain, wet it with a little Milk, and make it into a Paste, beat the Crumbs of white Bread with a little Milk, and put these with the Yolks of Eggs without a tread into the Mortar to the Paste; beat them up yet more, and then boil them till thick, and keep them up for use.

To take Spots or Stains out of the Face, Hands, or any Parts of the Body.

Take Litharge of Silver an ounce, the Juice of Limon and a Sea-Onion, each a Spoonful, mix these with a quarter of a pint of White-Wine-Vinegar over a gentle Fire, and apply a Rag dipped in them to the Spot, and often doing it will remove it.

To Whiten the Teeth like Ivory.

Take bruised Coral and Pumice Stone, finely sifted, and by rubbing the Teeth well with them, they will be as white as those of Infants.

To make Hair Grow and Curl.

Take the Ashes of Fern-Roots a handful, as much of those of the Vine, and make a Ley with them in Ox Urine, boil in it a handful of the Tops of Hyssop, and wash the Ends and Roots of the Hair with it, or the Bald place, and the Hair will immediately Grow and Curl.

To

To take Spots or Stains out of Silks, Stuffs, Woolen, Linnen; alſo Pitch, Tar, Roſin, Wax; and to recover Faded Silks, or Linen.

To take Spots or Stains out of Silks.

Take an ounce of Flax-Seed, bruiſe it well in two or three ſpoonfuls of the Juice of Limon, add a quarter of an ounce of white Lead, and as much of burnt Bone, mix them over a gentle Fire, to a thickneſs, lay them on the Strainer.

To make a Soap that will take Greaſe, Spots, or Stains out of Cloth, Silks or Stuffs.

Burn a pound of Roach-Allum, and finely pouder it, add to it half a pound of the Root of an Herb, called Florence-flame, then a new laid Egg, and two pound and a half of Cake Soap, bruiſe and mix them well together, that they may be made up with fair Water into Balls; then firſt waſh the place ſtained or ſpotted with fair warm water, ſcrape the Soap moiſt on it, and waſh it out, and in three or four times thus doing, the blemiſhes will diſappear.

To take Spots out of Linen.

Take two ſpoonfuls of the Juice of an Onion, and as much of Lime-Juice, wet it two or three times, as often drying it by a Fire, waſh it immediately in a good Laver, and it is done.

A good Ley to take out Spots or Stains.

Put half a Pound of Soap-boilers Aſhes into two Pints of Water; let them remain three days with often ſtirring, then pour off the clear Ley, and mix it with Fullers Earth and lay it thick on the place, drying it in the Sun, or by a Fire, and in two or three times doing, it will effect your deſire.

To take Spots or Stains out of Coloured Silks, Stuffs, Linen or Woollen.

Take Pumice-Stone and grind it to Pouder, put to it ſharp Vinegar and Fullers Earth, let it lie on and dry, then waſh it out with Milk, and the Flower of Almonds.

A way to take out Tar, Pitch, or Roſin.

Dab on this Oil of Turpentine, let that dry, and put on more, and the third time when it is dried you may rub out the Pitch, *&c.* for it will crumble like Dirt.

To take out Oil or Greaſe.

Mix burnt Bone and Fullers Earth with a little White Wine, and plaiſter them on the Spot, dry it by the Sun or Fire, and it will ſuck out all the Greaſe in once or twice doing.

Sweet

Sweet Pouders or Perfumes, &c.

To make Groſs Pouder Ala Marchale.

Take of Iris ſixteen ounces, dried Orange-Flowers twelve ounces, Coriander four ounces, a pound of Provence Roſes, two ounces of Angel Water Dregs, an ounce of Calamus, two ounces of Souchet, half an ounce of Cloves, beat them well one after another in a Mortar, mix them, and finely ſift them into one incorporated Pouder.

Pouder of Jeſſamine.

To make this, mix about a thouſand Sprigs and Flowers of Jeſſamine, amongſt twenty pound of fine Starch, in a cloſe Box, lay them even, making a Bed of Flowers, and a Bed of Pouder, and let them lie twenty four Hours without touching, then ſhift the Flowers, and put freſh ones the ſame quantity for three days, and the Pouder will be well ſcented.

Pouder of Musked Roſes.

To do this well, you muſt put the Muſked Roſes into the Pouder, and leave them there twenty four Hours, in a cloſe Box, ſo ſhift them three times, and they will give an excellent Scent.

Pouder of Orange Flowers.

Mix a pound of good ſcented Flowers with twenty pound of Starch, or Rice Grounds, min-

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gle them, and ſift them twice a day at leaſt, for theſe are ſubject to heat, and in twenty four hours you muſt ſhift the Flowers, and put the ſame quantity of freſh ones in, and ſo till there is a good ſcent, keeping it always cloſe, unleſs when you uſe it.

Pouder of Violets, or Iris.

In this caſe, beat the Iris, and paſs it through a Sieve, mingle it with the Pouder, and it gives the natural ſcent of a Violet.

Pouder of Amber.

Mix Jeſſamine, Roſe, and Muſk Pouder together, each a like quantity, then mix with them the eighth part of an ounce of the Eſſence of Amber; then ſift the Pouder, but break not the Lumps made by the Eſſence till dried, then ſift them in, and mingle them well; and in this manner with Flowers, Eſſences, *&c.* you may make what Scent you pleaſe, Starch being the Ground of theſe Hair-Pouders, which ſucks the Scents, and contains it a very conſiderable time for uſe.

Waſh-Balls Perfumed, *&c.*

Common Waſh-Balls, to make them.

Take a pound of white Cake Soap, ſcrape it, and beat it well in a Mortar; take out the Crumbles that are not well incorporated, and put in a pound of Starch well poudered, an ounce of the Eſſence of Orange, half a pint of Macanet-

net-Water prepared, ſtir them gently with a Peſtle, then beat till they are all well mixed, make the Paſte up into Balls, and let them dry.

Waſh-Balls of Neroli.

Take eight Pound of Cake-Soap well cleanſed, put to it when ſcraped, as much of Roſe or Orange Flower, as will well temper it, ſtirring it twice a day, the better to ſoak; then having beaten it well, put in a pound of Labdanum in Pouder, and two ounces of Neroli, mix them into a Paſte, and ſo make them into Balls.

Bologna Waſh Balls.

Take three Bundles or Boxes of theſe Balls, beat them, and dip them in Angel-Water, as much as will well wet them, add half a pint of Benjamin-Water, make two equal Cakes of the Paſte, by well beating, then beat very ſmall two drams of Muſk or Civet, with two ounces of Balm of Peru, dropped in by degrees; add to theſe the groſs Eſſence of Amber, and ſome Eſſence of Cloves, and ſome Cinnamon, mix theſe with the Paſte, make it into Balls, and keep it for a very curious Perfume; and in this nature other Waſh Balls, or Paſte may be made, and perfumed with various Scents.

Sweet Bags, to make.

Take of Common Roſe-Leaves twelve ounces, Lavender-Flowers a pound and a half, Sweet Marjorum-Leaves twelve ounces, four ounces of the Leaves of Myrrh, ſix ounces of Time-Leaves, four ounces of Mellilot-Leaves,

one of Roſemary, two of Cloves, one of Musk Roſes, a good handful of Citron and Orange-Flowers; put theſe in a Pot, making a Ley of Leaves and Flowers, and another of Salt, then ſtop it well, yet every other Day, ſtir it with a ſtick, expoſing it to the heat of the Sun in Summer, but not in the Rain, and fill your Sweet-Bags with theſe, and Pouder.

To perfume Gloves, Fans, or Skins, with Flowers, &c.

Grind on a ſmooth clean Marble-Stone, two drams of Civet, add three drops of the Eſſence of Orange-Flowers, and other Flowers, made with Ben-Oil, add more, a few drops of Millefleur-Water, grind by it ſelf Gum-Adragant, about the bigneſs of a Hazle-Nut mixed with Orange-Flower-Water; after that, mix your Civet, dropping a little of the Millefleur-Water; ſo do till all is well mixed, then put your compoſition into a Mortar, and pour more Water, ſtir it till it comes to a quarter of a pint, lay it very even on your Gloves, Skins, *&c.* dry them in the Air, open, and order them for Colouring, and by this Rule, you may Perfume them with any Scents.

Roman *Gloves, how to Perfume.*

Grind on a fine Marble, a dram of Civet, with a few drops of Eſſence of Orange-Flower-Water, then mix Gum-Adragant, of the bigneſs of a Hazle-Nut, in other Orange-Flower-Water, then warm a little Water, and infuſe in it a dram of Amber, with a few drops of Orange-Flower-Water, pouring more to it by degrees

degrees, till all come to about a quarter of a pint, then mix again the Civet, with ſome drops of the ſame Water, adding, till the whole comes to half a pint, and then Perfume your Gloves, Skins, or Fans with it.

How to Colour and Perfume Gloves, at once.

Chuſe what Colours you like beſt, and grind them on a flat Stone, with a little Ben-Oil, or the Eſſence of Orange Flowers, or Jeſſamin, pour Orange-Flower-Water by degrees, ſtill grinding, then put to the Colours, Gum-Adragant, diſſolved in Orange-Water, then being well ground, pour all into an Earthen Pan with more Water, taking the Colours, being not too thick, and then dip a ſoft Bruſh into it, and rub over Gloves, Skins, or Fans; let them dry in the Air, then ſmooth and order them as is requiſite; grind a bit of your Colour with a little piece of Gum-Adragant, infuſed in Orange-Flower water, and very clear, rub them over with this, and it will keep the Scent a long time.

Several ſorts of Snuff, Solid and Liquid, how to make and Perfume them.

To prepare and Cleanſe Snuff.

The Ground of it is Tobacco dried into Pouder, that it will ſift curiouſly through a fine Sieve, and then it requires briefly to be waſhed and cleanſed in the following manner.

Soak it in fair Water twenty four hours, then take it out, and squeeze it very well in a Cloth, dry it in the Sun on Wicker Hurdles, over which a fine Linen Cloth is laid, keeping it turning, and stirring almost continually; being dried, sprinkle Sweet-Water on it, as Orange, Jessamine, Angel, or the like, then dry it again, and wet and dry it three times, by which means it will be capable to take the Impression of any Scent, by being sprinkled on it, or infused; but if you design to colour it Red or Yellow, it must be done before it is scented, especially for Flower-Scents, it may be coloured with Red or Yellow-Oaker.

To Perfume Snuff with Flowers.

The Flowers most used in this, are Jessamine, Orange, Musk, Roses, Common-Roses, Tube-Roses, *&c.* But these if used naturally, must be helped with the Essence of other Flowers, or the same; to do this, get a wooden Box, large enough for your purpose, lined within with dry White Paper, lay a laying of Snuff, and a laying of Flowers, and let them stand twenty four hours, then searce or sift the Snuff, to take out the Flowers, and renew them with other Flowers; continue it four or five days, then separate it, and keep it in close Boxes in a dry place for use.

Snuff, with Spanish Perfume.

Take a pound of Snuff that has been Perfumed with any sort of Flowers, beat in a Mortar twenty Grains of Musk, with a little lump of Sugar, so put in your Snuff by degrees, gently

gently ſtirring it about, and when the Mortar is full, enipty it gently, and cover it to keep in the Scent as much as may be, then put in ten grains of Civet, put in the Snuff again, and mingle them well, and ſo keep it dry for uſe.

How to take Spots or Stains out of Scarlet or Velvet.

To do this, take Soap Wort, a Herb of that name, bruiſe it, and ſtrain out the Juice, add a little Black Soap, mix them well to a moderate thickneſs, daub over the ſtained or ſpotted place, waſh it out with warm water, and ſuffering it to dry, do it again twice or thrice, and it will effect your deſire.

To take Iron-Moulds, or Spots out of Linen.

Diſſolve the Pouder of Burnt Alom, in the Juice of Limon, wet the place with it, and dry it with the Back of a Spoon, in the fore-part of which is a Live Coal, and in doing it five or ſix times, the Iron Mould, or Spot will waſh out.

To Recover Faded Linen.

Heat a Gallon of New-Milk over the Fire, and ſcrape a pound of Cake Soap into it, and when the Soap is well diſſolved, boil the Linen well therein, and then clap it into a hot Laver of Water and other Soap, waſh it out well, and it will recover its Strength and Colour.

To make Pouder-Inks, as the *London*-Pouder Ink, *&c.* and Liquid Shining Japan-Ink.

To make that which is called the London *Pouder-Ink.*

Take ten Ounces of the cleareſt Nut-Galls, bruiſe them, and ſift the Pouder very fine, then add White Copperas two Ounces, Roman Vitriol three Ounces, Gum-Arabick, or Sandarack an Ounce, bruiſe and ſift them very fine, ſo that though they appear White, a little being put into Water, will in a little time turn it, and an Ounce of the Pouder will make a Pint of very black Ink.

To make Japan, or Shining Ink.

Take Gum-Arabick and Roman Vitriol, of each an Ounce, Galls well bruiſed a Pound, put them into Rape Vinegar, or Vinegar made of clear Small-Beer; let them remain in a warm place, often ſtirring, till the Liquor becomes Black, then add to a Gallon, an Ounce of Ivory Black, and a quarter of a Pint of Seed-Lac-Varnith, and it will be a curious Black Shining Ink.

A Pouder-Ink to rub on Paper, and Write on.

Bruiſe about twenty Nut-galls, and half an Ounce of Roman Vitriol, as much Gum Arabick, and Gum Sandarack, mingle theſe finely together,

together, when well bruiſed and ſifted to a Pouder, rub the Paper hard with it with Cotton Wool, and Poliſhing it with a piece of Ivory, write with Water, and in a little time, the Letters you write, will appear a fair Black, as if written with the beſt Ink.

Receipts for the Cures of ſundry Diſeaſes and Grievances, Incident to Men, Women, and Children.

For the Ague.

Take a little handful of the Tops of Rue, boil them in a Quart of White Wine, give the party half a Pint, four times ſucceſſively, upon four Cold Fits approaching, if the Ague laſt ſo long, and put the party into a warm Bed, this muſt be drank as hot as the Patient can drink it.

To Eaſe and remove the Pains of the Gout.

Take two Ounces of Sarſaparilla, cut it ſmall, and boil it in a Quart of Small Beer, till a third part be conſumed, drink it as hot as may be, and about a quarter of an Hour after, bathe in with your warm hands a mixture equally of the Spirit of Wine, and the fineſt Oil of Turpentine, where the afflicting Pain is, and it gives preſent eaſe, and in a ſhort time makes it ceaſe.

For Pains of the Teeth.

Take Henbane-Seed, and Hyſſop-Seed, bruiſe them finely together, mix them that they may

ſtick well, with a little Oil of Spikenard, if hollow, ſtop the Tooth with theſe, and a piece of Lint dipped in the Oil; if not, tie up the quantity of a large Pea, in a fine thin Rag, and lay it to the Root of the Tooth, and the Pain will ſoon ceaſe.

To take away Corns.

Cut well and cloſe, take out as much of the Coar as you can, then take Burnt Allum, and the Pith of an Oiſter that ſticks to the Shell, dried and poudered; incorporate theſe with a little Venice-Turpentine, put into the hollowneſs, if there be any, a little Tent of Lint dipped in the Oil of Cloves, and lay on the other as a Plaſter, and it in a Weeks time with thrice renewing, takes away the Corn, making Fleſh ariſe to fill the hollowneſs.

For Blaſts, Burns, or Scalds.

Take Ointment of Tobacco a quarter of an Ounce, Pidgeons or Pullets Dung, half an Ounce, Sallad Oil two ſpoonfuls, Snow-Water the like quantity, Cream a quarter of a Pint, and the White of a New laid Egg; beat and bruiſe theſe till they become a pliable Ointment over a gentle Fire; ſpread them on a fair Cloth, and lay it to the afflicted Part, and in three or four times renewing, it will take out the Fire, and put the Party in an eaſie way of Recovery.

For the Stone or Gravel, in the Reins or Bladder.

Take Green Parſly, if it can be got, that is running to Seed; if not, other Parſly, ſtamp it, and

and ſqueeze out an Ounce of the Juice, and as much of that of a very hard Onion; take a little handful of Sloes, bruiſe them that the Stones may break, mix theſe with a Pint of White-Wine, and boil it well, then add to the ſtrained Liquor, a quarter of an Ounce of calcined Crabs-Eyes or Claws, and let the Patient drink faſting half of it, and move up and down ſwiftly, and within a quarter of an Hour the reſt; and it will ſpeedily afford eaſe, and bring away Sand and Gravel, if it remain in the Ureters, or Neck of the Bladder or Yard.

For a Conſumption.

Take a Pint of Stroakings of a Red Cow, warm from her, and beat the Yolk of an Egg in it; and then ſweeten it with Sugar of Roſes, a Spoonful of red Roſe Water, and a little Nutmeg ſcrap't in. Drink it in a Morning for a Month: This Cured one given over by the Doctors.

For the Cramp.

Dry Eel Skins, and wrapp about your Legs and Thighs.

Cough or Cold.

Take a Quart of Ale, and put a handful of Red Sage into it, Boil it to a Pint, and put a quarter of a Pound of Treacle into it. Drink it warm going to Bed.

Bruiſes Inward.

Drink Poſſet-Drink wherein Comfry-Roots is boil'd, or heat Sack with Saffron and Treacle, over the Fire, and Sweat in Bed; and ſome time eat Honey mixed with Nutmeg and Butter. Read more of theſe things in the *Way to*

get Wealth, by making 23 sorts of Wine; also to make China Varnish, and Black Ground for Japan-Work, to black Wood and Gild; with divers other Curious Matters. Sold at the *Ring* in *Little Britain*. price 1 *s.* 6 *d.*

For the Jaundice.

Broth made of Strawberry Leaves and Roots, Eaten some Days together, Cureth it. A Monk got great Riches by it. Read more of these, in a Book call'd *A Thousand Notable things*, wherein are many choice Receipts in Physick, and to make all sorts of Inks; Dye Bone, Ivory, *&c.* make Sealing Wax, to make fine Pictures and Shashes for Windows; with Receipts for Perfuming, Gilding, Dying, Colouring, and on most Subjects whatever. Sold at the *Ring* in *Little Britain*, price 1 *s.* 6 *d.*

Aches and Pains.

Ale sod till as thick as a Salve, apply'd thereto; marvelously cureth it, often proved.

Chopt Lips.

Rub Chops or rough Lips with the Sweat behind your Ears, and it will make them fine, smooth, and well Coloured. Read a Book called *The Way to save Wealth*, by living well for Two Pence a Day, and to save Soap, Shoes, Candles; to write Secretly, keep Cloths from Moth, Dye Reds, take Spots out of Linen and Woollen, make Verdigrease, Sympathetick Ink, White Lead, Soap, and many other curious matters, price 1 *s.* 6 *d.* Sold at the *Ring* in *Little Britain*.

Thus *Reader*, have I made good my Promise in this crouded Work, full of Variety, and must now proceed to the Second Part.

THE

THE SECOND PART.

CHAP. I.

To make Glaſs of Chryſtals, of all the ſeveral Colours, as Greens, Gold, Yellow, Black, Garnet, Saphire, Ruby, Amethyſt, Chryſtal, Pearl, Turquois, and many other Oriental Colours; the ground Work of making Glaſs, and to prepare the Materials.

The Foundation of the Work for Glaſs-Making.

THE firſt thing to be conſidered in this, is, the Pulverine or Rochetta, which is the Aſhes of certain Herbs growing in the *Levant* and *Syria*; making a Whiter Salt than Barilla of *Spain*, and more excellent for fair and beautiful Chryſtal.

To extract this Salt, pouder the Aſhes, and ſift them very fine, and to know how theſe Aſhes prove, touch them with your Tongue, to try the more or leſs Saltneſs; or make an Eſſay in a Melting-Pot, to know whether they bear much Sand, or Tarſo, a thing uſual in this Art.

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Having tried your Aſhes, ſet up Braſs Coppers, with their Furnaces in Imitation of thoſe uſed in Dying, greater or leſſer, as the quantity of Salt intended to be made requires; fill them with fair Water, and let your Fuel be dry Wood; and when the Water boils, put in the Pulverine, in a juſt quantity and proportion to the Water, and boil it with a continued Fire, till the third part of the Water be conſumed, mixing them well at the bottom with a Scummer, that the Pulverine may well incorporate with the Water, and all its Salt be extracted; then put in other fair Water, and boil it till half be conſumed, and ſo there will be a Lee impregnated with the Salt: But to encreaſe the quantity of the Salt, and have it whiter, boil in the Water, before you put in the Pulverine, twelve Pound of Copper of Tartar, of Red-Wine, calcined to a black Colour only.

When two thirds of the Water is conſumed in boiling, ſlacken the Fire, ſeaſon earthen Pans with fair Water, ſix Days, then put the Lees into them with large Braſs Ladles, as alſo the Ice you find in the Coppers, with the Aſhes; and having filled the Pans, let them ſtand Ten Days, and in that time the Aſhe will be at the bottom, and the Ice remain very clear, which muſt be taken gently off with Braſs Ladles, that the bottom riſe not; put it in other Pans, and let it ſtand two Days, that being purged from Settlings, it may be more clear and Limpid, which will be effectual when thrice ſettled, and ſo work till you have Materials ſufficient.

To ſtrain the Lees, and extract the Salt, in the firſt place, let the Coppers be well waſhed with

with clear Water, ſo fill them with the refined Lees; let them boil gently, and fill the Coppers with the Ice, till it thicken and ſhoot its Salt, which uſually happens about the beginning of twenty four Hours; ſo that on the ſuperficial part, Salt will appear like white Threads, or Spider's Webs; then ſink a Scummer full of Holes, to the bottom of the Copper, and then the Salt will fall upon it, and now and then take it out, ſuffering the Lees to run well off, and put the Salt into Tubs, or Earthen Pans, by which means the Ice may the better drain; ſave the Liquor that drains from it, to put into the Copper, and dry the Salt; ſo continue to do till all the Salt be gotten out of the Copper, and when the Salt is well drained and dried, put it into wooden Veſſels, which will ſuck up the Moiſture; and ſo from Three Hundred Weight of Aſhes, Eighty or Ninety Pound of Salt may be gotten proper for this Curious Work, which being well dried, beat it groſly, and put it into the Calcar, a kind of a Calcining Furnace, to dry with a gentle heat; rake it over with an Iron Rake, when it is dry, take it out, pound it well, and ſift it, that the biggeſt Pieces exceed not Grains of Corn; when it is ſo ordered, it muſt be kept clean from Duſt or other Annoyances, to make Frit of Chryſtal, which is made in the following manner.

To make Frit of Chryſtal, or Bollito.

To make this, conſider if you would have your Chryſtal fair, that you procure the fineſt Tarſo, a kind of hard and moſt white Marble, found in *Tuſcany*, beat it ſmall with an Iron Peſtle, in a Mortar, and ſift it as fine as Flour, and

and put Two Hundred pound of it to about One hundred and thirty pound of Pulverine Salt so ordered, and mix them very well together; then put them into a Calcar, at first well heated for an Hour, make a temperate Fire, and rake the Frit with an Iron Rake, that it may be well incorporated and calcined; then encrease the Fire, raking the Frit for Five Hours, and raising the Fire by Degrees to a strong one, and when it is sufficiently done, take out the Frit, lay it on a Floor, cover it with a Cloth, and keeping all Dust from it, it will be as white as Snow; keep it then in a dry place, that the Salt relent not, for if it do, and run from the Tarso, it will not vitrifie, and if it stand Three or Four Months, it will be the better to put in the Pots, and soon wax clear, and be fit to prepare a curious Chrystal Glass.

To make common Glass.

Frit of Pulverine makes an excellent white and common fair Glass. Frit of Rochetta makes that between Chrystal and common Glass, as much Maganese well prepared, must be used in common as Chrystalline Glass, and these, that you may have them the fairer, must once at least be cast into Water, and if you would have them very fair, oftener, as you see convenient, and then you may work them into what Vessels you please; and to make them whiter, let them be well calcined, that there may be the fewer Blisters, and particularly observe, that if to each of them themselves you put upon the Frit the Proportion of Twelve pound of Salt of Tartar purified, to a Hundred pound of Frit, the Glass will be more pliable to work, and fairer than

than ordinary; and herein Note, That you put in the Salt of Tartar when the Frit is made, and then mix the Sand or Tarso with the Rochetta or Pulverine well sifted, and make them of a Frit as before.

How to Purifie Salt of Tartar for this Work.

Take the Lumps of Tartar of Red Wine, calcine it in Earthen Pots till it becomes black, and its Oily Quality consumed, and it begins to turn white; but let it not come to perfect Whiteness, because then its Salt will be naught; put it then into Earthen Pans, full of fair Water, heated also into glazed Earthen Pots; make it boil over a gentle Fire, that a fourth Part of the Water may in Two Hours be evaporated, then take it off to cool, and when the Water is become clear, decant it into other Vessels, and it will be a strong Ice; then put into the Pans more common Water upon the Remainder of the Tartar, and let them boil as before, till the Water becomes no more Brackish.

This done, filter these Waters, and impregnate with Salt; put the filtered Ice into Glass Bodies, to evaporate in the Ashes of the Furnace at a gentle Heat, and in the bottom a white Salt will remain, which dissolve in warm Water, and when it is Two Days settled, evaporate it at a gentle Heat, in Glass Bodies, and there will be a whiter Salt remain at the bottom than the former; dissolve this again, and filter and evaporate it after Two Days settling, in the manner as before. Do all these things Four Times, and the Salt will be of the whiteness of Snow, which Salt, mixed with Rochetta and Pulverine, mixed with a sufficient quantity of Tarso,

Tarſo, will make an excellent Frit, that put in the Pot, yields Chryſtalline and common Glaſs, much fairer than that which is made without this Salt of Tartar.

Of Colouring Glaſs, and firſt a curious Green.

Having given you the Ground-Work for white Glaſs, the moſt excellent Way; I come now to revive that excellent Art of Colouring Glaſs.

To make a curious Green in Glaſs, to a Pot of Ten Pound of the Metal of white Glaſs, *viz.* half of Chryſtalline, ſeveral times paſſed through Water, and the other half the common white Metal of Pulverine. Take Four Pound of the Common Frit of Pulverine; with theſe mix Three Pound of Red-Lead, unite them well together, and put them into a Pot, and all of them in a few Hours will be well purified, then caſt the Metal into Water, and take out the Lead, ſo return the Metal into the Pot; let it purifie for the Space of Twenty four Hours, at what time, if you put in the Colour, made Chymically with the Pouder of the *Caput Mortuum*, of the Spirit of *Vitriolum Veneris*, adding a ſmall quantity of *Crocus Martis*, the Colour will be perfected, and there will ariſe a marvellous pleaſant Green, reſembling the Oriental Emerald.

Another curious Green, Fair and Shining.

To do this, put Chryſtalline into a pot that has not had any Maganeſe in it, and which has once or twice paſſed through Water, to take out the Saltneſs, and to it put half as much Common,

Common, or white Metal, made of Pulverine, at ſeveral Times, and when it is well mixed and purified, put to every Hundred Pound, Two Pound and a half of thrice calcined Braſs, made in the Arches of the Furnace, with Plates of Braſs, and with this mix Two Ounces of calcined *Crocus Martis*, calcined with Brimſtone, and reverberated; and theſe Pouders being well mixed together, put them to the Metal, and if it has any Blueneſs, add a little more of the Pouder of *Crocus Martis*, and it will take it away and work it well with the Metal, according to Art, and there will be a wonderful Green of the Burnet.

A fair Sea Green in a Chryſtal.

Put about Sixty Pound of Chryſtal Frit in a Pot well ſcummed, and not caſt into the Water, and to the Metal put a pound and a half of the Scales of Braſs that come off by hammering the Fire when you have well calcined them, Four Ounces of well-prepared Zaffer, the Pouders being well mixed together before they are put into the Chryſtal, put them in at Four times, mixing well the Pouders with the Metal Two Hours, and then give it another Mixture, as is uſual in this Work, and make a proof of it till the Colour has taken. A beautiful Sea-Green, may be made in this manner, with half Chryſtal, and half Rochetta.

A Cheap Green.

Take the like quantity of Zaffer and Braſs, prepared as before, put them in the ſame Manner and Form to the Rochetta of the *Levant*, as

as also that of *Spain*, neither of them having had any Maganese, but been well scummed, and not passed through Water, using the Rules as aforesaid in the Green Chrystal, and by this means it will receive a very fair Colour, and may be afforded at a very cheap Rate.

A Gold Yellow in Glass.

To do this, take Rochetta Frit one part, Chrystal Frit Two parts, being both made with Tarso, mix them well together, and to every Hundred Weight, take of Tartar in Lumps well beaten, and sifted fine, with prepared Maganese, each one Pound, mix the Pouders well with themselves, and then with the Frit, so put them into the Furnace, and let them stand Four Days at an ordinary Fire, by reason they will rise much, and the Metal being purified, and the Colour well mixed with it, work it into what you think convenient for your use. In this case, you must observe to put your Colours in at several times, that the Colour may take the better, and you may heighten or lessen the Colour, the more or less you put in. But if you would have a fair good Colour, let the Frit be all Chrystal.

Glass, a Garnet Colour.

Take a little quantity of Rochetta and Chrystal Frit, and to every Hundred Pound, add one Pound of Maganese, and an Ounce of prepared Zaffer, mix them well together before you put them to the Frit; put them into the Pot by little and little, and at the end of Twenty four Hours, when it is well mixed, and of a pure Colour, work it into Form.

To

To make Glaſs of Saphire Colour.

Add a Pound of Zaffer, to every Hundred Weight of Rochetta Frit; let the Zaffer be well prepared, and to every Pound of it add an Ounce of Maganeſe; mix the Pouders well together by themſelves, and after that with the Frit; put them thus mixed into a Furnace, melt and purifie them, and when it is pure and well-Coloured, work it, and the Colour will be fine and durable.

To make Glaſs of the Colour of Amethyſt,

Take the Chryſtal Frit, made of the fineſt Tarſo, Maganeſe well prepared a Pound, Zaffer done the like, one Ounce and a half; firſt mix theſe Pouders well together by themſelvs, and then with the Frit, not with the Metal in the Pot. The Proportion is a Pound of the Frit to an Ounce of the mixed pouder, and when it is pure and well coloured, work it as you pleaſe.

A Saphire Colour, very fair.

Inſtead of Rochetta, take Chryſtal Frit, then add the ſame quantity of Pouder, as to the other Saphire, and order it in all points the ſame way, and you will have a fair ſhining Saphire coloured Glaſs.

To make Glaſs a very Curious Black.

To do this, take the Frit of Chryſtal and Pulverine Twenty Pound each, Calx of Tin and Lead four Pound, mix them well together, put them in a Pot, into a Furnace well heated, and the Metal being pure, take Steel well calcined, and poudered Scales of Iron falling from the Smith's Anvils, each an equal quantity, pouder and well mix them, put ſix Ounces of this to the

the Metal; let them ſtrongly boil, and then ſettle twelve Hours, mixing ſometimes the Metal and then work it, and it will be a very fair Velvet Black, fit for all Devices that require it.

To make Glaſs, another fine Black.

Take of Rochetta Frit, about Two hundred Pound, to this put Two Pound of Tartar, and Six of Maganeſe, both in Pouder, and well mixed; then put them leiſurely into the Furnace, and when they are melted and purified, which will be at the end of Four Days, then mix and waſh the Metal, which will make a very curious Black.

To make Glaſs a very deep Red.

Take Twenty Pound of Chryſtal Frit, One Pound of broken Pieces of white Glaſs, and Two Pound of calcined Tin, mix them together, and put them into a Pot to run and purifie, and when they are melted, take calcined Steel, Scales of Iron, falling from the Anvil, of each a like quantity, grind them well together, and when the Metal is purified, put leiſurely an Ounce of theſe to it, ſo mix them well, and let them incorporate, which may be well done in Five or Six Hours; but beware you put not in too much Pouder, for that will make the Metal Black, whereas the Colour ought to be tranſparent, and not *Opacous*, of an obſcure Yellow. When you find it ſo, forbear putting in any more Pouder, but put in Three quarters of an ounce of Braſs, calcined to Redneſs; let it be well ground, and in Three or Four Times mixing it will be as Red as Blood, for which Reaſon make frequent Eſſays, to try the Goodneſs of the Colour; then take it in the Nick, or it will loſe its Colour, and become Black;

Black; and that it may not do ſo, leave the Mouth of the Pot open; let it not ſtand above Ten Hours in the Furnace, and ſuffer it to cool as little as poſſible; and if you perceive the Colour fade, which ſometimes it will do, put in ſome Scales of Iron, which will reduce it; and by Reaſon this is one of the niceſt Colours to be made, be careful in every thing, eſpecially putting in the Steel and Scales, as alſo in working it.

To make a fair Milk-white Glaſs, called Lattimo.

To do this curiouſly, take Chryſtal Frit Twelve Pound, calcined Tin and Lead Two Pound, mix them well together, then take Manganeſe prepared, half an Ounce, incorporate them well, and put them into a Pot heated; ſuffer them to ſtand Twelve Hours, that the Materials may be well melted, and ſo working them, it will come a fair White, very pleaſant to the Eye.

To make Glaſs another fair White.

To do this, take about Four hundred Pound of Chryſtal Frit, and Sixty Pound of Tin calcined, Two Pound and a half of Maganeſe prepared, Pouder them well, and mix them with the Frit, and ſet them in a Pot in the Furnace, and let them refine Eighteen Hours, and then it will be purified; then caſt it into Water, and purifie it again in the Furnace, and make an Eſſay, and if it be too clear, add Fifteen Pound more of calcined Tin, mix it often well with the Metal, and at the end of Twenty four Hours, it will become exceeding White, and ſo work it. You may make this in the ſame manner, with Rochetta Frit, but not ſo pure a White.

To

To make Glass Peach-Colour in White.

Work this as the fair Milk-white, or *Lattimo*, only with a little more Maganese, and it will be of a Peach Bloom Colour; but take the exact time to work it, when it has its full Colour, lest it loses it.

To make Marble-Coloured Glass.

This is easily done, observing well the Rule, which is to put Chrystal Frit in a Pot, and when it is melted, before it is purified, work it, and it produces a fine Marble-Colour.

To make Pearl Colour.

Melt and purifie Chrystal, and put to it at three or four times, Tartar calcined to Whiteness; or so many times, that on the Essay you find the Chrystal has taken a Pearl-Colour, so work it off speedily, lest the Colour should fade.

Frit of Natural Chrystal, &c.

To make this, you must have Natural Chrystal, and calcine it in a Crucible, extinguishing it eight times in fair Water, covering it so close, that no Ashes or Dirt get in, and when the Chrystal is well calcined, dry it, and grind it to an impalpable Pouder; mix this Pouder with Salt of Pulverine, made in a Glass Body, and make Frit with them, observing the Quantities, Rules and Proportion of Maganese, as in other Frit, setting it into the Furnace, and at due and oftentimes casting it into the Water, and purifying it, work it as other Chrystal, and you will make a curious Matter of it.

To make Glass Blue, or Turquois.

Take that Sea-Salt, that is called Black or Gross Salt, put it into the Calcar, or Furnello, till

till all the moiſture be evaporated, and it becomes White; beat it well into a fine Powder, put it into a Pot of Chryſtal Metal, Dyed with the Colour of Sea Green, made as I have directed, put in the Calcined Salt by little and little, and mix it well with the Metal, till the Sea Green loſes its Tranſparency and Diaphanety, and takes Opacity. For the Salt once vitrified, makes the Metal loſe its Tranſparency, giving it a Paleneſs, and by little and little encreaſes to a Sky-Colour, or that of a Turquois Stone, and when it has taken this Colour, it muſt be ſpeedily worked, or the Salt will be loſt by Evaporation; and if the Colour be loſt, you muſt begin your Work again, with freſh Calcined Salt. And now, before I go further in this curious Art, known but to a few, having made mention of many things uſeful in Glaſs Work, for the better Underſtanding of the Reader, I ſhall give a more particular account of them.

To prepare Zaffer, uſeful in many Colours.

Take this in groſs Pieces, let it ſtand twelve Hours in the Furnace, in Earthen Pans, ſo put it into an Iron Ladle, to be heated red hot in the Furnace, and taking it thence, ſprinkle it with ſtrong Vinegar, and being cold, grind it on a fine Porphiry-Stone, and waſh it in glazed Earthen Veſſels, with warm Water, ſuffering the Zaffer to ſettle at the bottom, and then decant it gently off, which will take away the Droſs, and leave what is pure, ſo that the Tincture will remain in the bottom; and thus prepared and purified, it will tinge more excellent than at firſt, making a Limpid and Clear Tincture, which well dried, may be kept in cloſe Veſſels for uſe.

To

To prepare Maganese for Colouring Glass.

Take that of *Piemont*, as being the best of all others, put it into Iron Ladles, and in all the rest proceed as in the Zaffer.

To make Ferretto of Spain, *to Colour Glass.*

To do this, calcine Copper, that the Metal being opened, may communicate its Tincture to the Glass, *viz.* Take thin Plates of Copper, of the bigness of a *Florentine*, and have one or more Goldsmiths melting Pots; make a Layer of Brimstone, Pouder'd in the bottom of one of these, then a layer of Plates, and over them another Layer of Pouder; and in this order fill the Pot, which is otherwise said to make a S S S Cover. Lute it well, and dry the Pot, then put it into an open Wind Furnace, amidst burning Coals; give it a strong Fire for two Hours, and when it is cold, you will find the Copper calcined. This Copper beaten small, and searsed into fine Pouder, must be kept for use.

To make or prepare Crocus Martis, *used for Colouring Glass.*

This is no other than subtilizing and calcining of Iron. To do it, take the Filings of Iron, or those of Steel, which are better, mix them well with three parts of Pouder of Sulphur, put them into a melting Pot, and then into a Furnace to calcine, and burn well off all the Brimstone; so let it stand four Hours in Burning Coals, then take and pouder it; searse the Pouder very fine, and put it into a Crucible, covered and luted at the top, then set it in the Leer of the Furnace, near the Occhio, or the Cavelet, fifteen Days, or somewhat more, and it will be of a reddish Colour, enclining some-

what

what to Purple. Keep it in a cloſe Veſſel, to be uſed in Glaſs Colours, in which it is uſed with admirable Succeſs.

To calcine Braſs, called Orpello, *or* Tremolante, *making a Curious Sea Green, or Sky Colour.*

Take thin Braſs, and cut it in ſmall Pieces, ſo put it into a Crucible, covered and luted at the top, ſet that in a fierce Fire; let it ſtand four Days in a great, but not a melting Fire, for if it melt, your Labour is loſt. In that time it will be very well calcined, ſo pouder it in the moſt ſubtil manner; ſearce and grind it fine on a Porphiry Stone, and there will be a black Pouder, which ſpread on Tiles, and keep it in a Leer, on burning Coals four Days, near to the round Hole; take away the Aſhes that fall upon it, pouder and ſearſe it again, and ſo keep it choicely for uſe; and to know whether it be well calcined, put it into Glaſs, and if it makes it ſwell it is right, but if not, it is not well calcined, or elſe over-burned, and then it will not colour well.

To Calcine Braſs another way, to make a Tranſparent Red.

Cut it ſmall as the former, and put it into a melting Pot, with Layings of Pouder of Brimſtone, and Metal, as in Copper; firſt ſet it on kindled Coals; then put it into a ſtrong Fire in the Furnace, to calcine for twenty four Hours; then pouder and ſearce it, put it cover'd into the Furnace, on Tiles of Earth for twelve Days to reverberate; ſo pouder, grind, and keep it for uſe; and beſide a Red, it contributes principally to the making a Yellow and Chalcedony.

A Red Colour from Braſs.

Put ſmall Pieces of it in the Arches of the Furnace, and let them be there cloſe, till they are well calcined, but in ſuch a Fire as they may not melt; and when calcined, pouder the Braſs, and the Pouder will be red and excellent in many uſes, for colouring Glaſs. Braſs thrice calcined, is likewiſe very excellent, and is ordered in the following manner.

Braſs thrice calcined, to make a curious Colour in Glaſs.

Put this on the Leer, or into the Furnello of the Furnace, near to the Occhio, into Pans baked, or Earthen Tiles; calcine it four Days, and you will have a black Pouder, ſticking together; beat it fine and ſearſe it; calcine it as before, but a Day longer, and then it will not ſtick together, and be of a Ruſſet Colour, and ſo the third time; but obſerve it be not too much nor too little calcined, for then it will not colour well; and to know when it is well, put it to purified Metal, it will make it boil and ſwell, and if it does not, it is too much or too little.

This makes a curious Sea-Green, and an Emerald Green. The Arabian Colour called Turquois, a curious Sky-Colour, with other Varieties.

CHAP.

CHAP. II.

To make Glaſs of Lead, of many Beautiful Colours, reſembling thoſe of Oriental Precious Stones, as Emeralds, Topaz, and others, and the Materials uſeful in the Work.

The Ground Work for making Glaſs of Lead.

THIS is a very curious Art, which but a few underſtand, eſpecially as to the Colours; though it may be held the nobleſt and faireſt of all other Glaſs, yet great Caution muſt be uſed in making it; for being well made, it imitates the true Oriental Gems, which cannot ſo well be done in Chryſtal, or any other Glaſs; yet you muſt uſe great Diligence in melting it, leſt all ſorts of Pots are broken in doing it, and ſo the Metal run in the Furnace; and the Buſineſs chiefly conſiſts rightly in knowing how to calcine Lead, and to re-calcine it a ſecond time; for the more it is calcined, the leſs it returns to Lead, and leſs endangers your Pots.

Obſerve alſo to caſt the Metal into Water, and by that means ſeparate the Metal from the Glaſs, even the laſt Grains of it, but it muſt be done by little and little, that the Separation may be made the better, for the leaſt Lead remaining, breaks out the bottom of the Pot, and lets the Metal fall out; and farther obſerve, that the Pots and Lead muſt not have too much Heat in the Furnace, neither muſt the Metal be wrought too hot; and the Marble wherein it

is wrought, must be of the hardest Stone, and be wetted, or else it will break and scale.

A Curious way to calcine Lead.

At first calcine it in a Kiln, as Potters use, in a great quantity, and in two Days they usually calcine three or four Hundred Weight. In calcining, take especial Notice, that the Kiln be not too hot, but so that it may keep the Lead in continual Infusion, or otherways it will not be calcined. When it is well melted, you will observe at the top a yellowish matter; then prepare to draw forward the calcined part, with an Iron suitable for the purpose, ever spreading it in the Internal Extremity of the Kilns bottom, which ought to be of soft Stone, that will bear the Fire, and the Kiln must have a declinative towards the Mouth. When it is calcined, it must be put and spread a second time in the Kiln, that so in a convenient Heat it may reverberate, keeping it stirring with the Iron for several Hours, till it come to this second Calcination, to a good Yellow, and be calcined; then finely searse it, and what passes not the Searse, re-calcine it with new Lead.

To make Glass of Lead.

Take fifteen Pound of calcined Lead, Chrystal Rochetta, or Pulverine Frit, according as you would make the Colours twelve Pound, mix them exceeding well, and put them into a Pot; let them stand ten Hours, and then cast them into Water, for by that time they will be well melted; separate the Lead, and return the Metal into the Pot, which at the end of twelve Hours will be fit to work.

How

How to work the Glass of Lead.

To work this into Vessels, it will be necessary before it is taken upon the Iron, to be a little raised in the Pot; so take it out, and suffer it to cool a little, then work it on the Marble, being clear at first; let the Stone be wet with cold Water, that the Glass may not draw away with it the Marble, and scale it; which without wetting it will, and so to the Damage of it, incorporate it into it sel; therefore you must continually wet it whilst the Glass is wrought, otherwise, by the Marble sticking in it, the Fairness and Beauty will be taken from it; do thus as often as you take the Metal out of the Pot.

This sort of Glass is very tender, that if it be not cooled in the Furnace, and taken a little at a time, and held on the Irons, and the Marble continually wetted, it is next to an Impossibility to work it, which cause proceeds from the calcined Lead, that renders it so very tender; yet when well wrought, it is an excellent Glass.

To make Glass of Lead, of an Emerald Colour.

Take twenty Pound of the Frit of Pulverine, sixteen Pound of calcined Lead, sears'd both into two Pouders, first by themselves; and when well mixed together, put them into a Pot, not too hot, for eight or ten Hours, and then they will be melted; so cast them into Water, and separate the Lead and the Unctuosity which calcined Lead and Pulverine give it, and there will ensue a bright shining Colour, and in a few Hours it will run, and become very clear, then put into it Brass thrice calcined,

six Ounces, mixing with it a Penny Weight of *Crocus Martis*, made with Vinegar, put in at six times. This Mixture always well mixing the Glass at least every two or three Minutes; let it settle an Hour, then mix, and take an Essay thereof, when the Colour is apt; then incorporate eight Hours, and work it into Vessels, or other Devices.

Note, If you let it stand in a Pot when it hath received its Colour, till it hath consumed all the Dregs, and is perfectly refined, it will be so like the natural Emerald, that the Sight can hardly distinguish one from another.

Another Curious Green.

This is made in all respects as the foregoing Green, with this addition, *viz.* That there must here be six Ounces of *Caput Mortuum* of *Vitriolum Veneris*, instead of the Brass in the other.

This is the rarest Green that can be made any way whatsoever.

A Sky or Sea-Green, in Glass of Lead.

Take sixteen Pound of the Frit of Chrystal, ten Pound of calcined Lead, mix and searse them well together; set them in the Furnace twelve Hours, and the Stuff will be melted; then cast both it and the Pot into Water, to separate the Lead; then a second time let them stand eight Hours in the Furnace; again cast them into the Water, separate the Lead, and again put them into the Furnace, and in eight Hours more the Metal will be very clear; then take of Zaffer well prepared, a quarter of an Ounce, calcined Brass four Ounces, mix them well, and put them in at four Times, in four equal Quantities, and at the end of two Hours mix well

well the Glaſs, and take an Eſſay of it; then let it ſtand ten Hours, in which time the Colour will be well incorporated, the Glaſs very well perfected, and be fit to be wrought in any Works.

A Topaz Colour in Glaſs of Lead.

Take fifteen Pound of Chryſtal Frit, twelve Pound of calcined Lead, mix and ſearſe them well together, and ſet them in the Furnace, but not too hot; at the end of eight Hours put them in Water, to ſeparate the Lead from the Pot and Glaſs; repeat this twice, and add half Glaſs, of a Gold Yellow Colour; let them incorporate and purify, and it will be of the Colour of an Oriental Topaz.

Garnet Colour in Glaſs of Lead.

Take twenty Pound of Chryſtal Frit, and ſixteen Pound of calcined Lead, ſearſe and put them into a Pot, add to them of Maganeſe three Ounces, of Zaffer half an Ounce, both well prepared, and let them ſtand ten Hours, caſt them into Water, and ſeparate the Lead, then put them again into the Furnace, and let them purify ten Hours, ſo mix them, and make an Eſſay, and when it is perfected, and the Colour of a fair Garnet, work the Metal into what Form you think moſt convenient.

To make a Yellow Gold Colour in Glaſs of Lead.

Take calcined Lead, and Chryſtal Frit, each ſixteen Pound, mix and ſearſe them, then add thrice calcined Braſs ſix Ounces, *Crocus Martis* made with Vinegar, a Penny Weight, mix them well, and put them into a Furnace, and let them ſtand twelve Hours; then caſt them into Wa-

ter, to ſeparate the Lead, and put them again into the Furnace, where let them ſtand other Twelve Hours, then the Metal will be clear; ſo mix them, and take an Eſſay; and if it appear Green, put in a little more *Crocus Martis*, which will take it away, and ſo it will become a fair yellow Gold Colour.

A Sapphire Coloured Glaſs of Lead.

Take of Chryſtal Frit Fifteen Pound, calcined Lead Twelve Pound, ſearce and well mix them together, ſo add to them a Penny Weight of Maganeſe, and Two Ounces of Zaffer, both well prepared, and let them ſtand Twelve Hours in the Furnace; caſt them into Water, and ſeparate the Lead. Do the like a ſecond time, and when the Colour takes, it will be that of Oriental Sapphire, very fair, with the mixture of a double Violet Colour.

To Colour Natural Chryſtal of a Viper-Colour, without Melting.

Take Chryſtal that is of a good Water, fine and clear, in ſeveral Pieces of different Bigneſs, yellow Orpiment, and crude *Mercury* in Pouder, of each Two Ounces, Sal-Armoniack one Ounce; let the Three laſt, in fine Pouder, be well mixed together, and put them in a Crucible that will well bear the Fire, and upon them the Chryſtal in Pieces, ſo cover the Crucible with another, Mouth to Mouth, and well lured, and when they are dry, ſet them on Coals, which kindle by little and little, and being fired, ſuffer them to flame of themſelves, and then they will ſmoak much, therefore you muſt do it in a large Chimney, to avoid the Fumes, which are hurtful, and when the Fumes are evaporated,

evaporated, let the Chryſtal ſtand all cold, by the going out of the Fire of its own accord, ſo unlute the Crucibles, and take out the Chryſtal, and thoſe on the top will be tinged with a curious Yellow, a Red Ruby and Balaſs Colour, with fair Spots, and thoſe at the bottom into the Wavy Colour of a Viper, and will endure a good poliſhing, and contain a curious Luſtre.

A curious Lapis Lazuli *Colour.*

To do this, melt the moſt tender white Chryſtal and *Lattimo* in a Pot, and when well melted, put in Blue Smalt, by little and little, and when the Colour comes well, let it ſtand in the Fire Two Hours; then make an Eſſay of it, and when it is Proof, let it ſtand Twelve Hours; mix and work it, and if the Metal riſe, put in a Piece of Leaf Gold, and it will allay it, and ſo you will have the natural Colour of *Lapis Lazuli.*

To Colour Natural Chryſtal like Rubies, Balaſs, Topaz, Gizaſole, Opal, &c.

To do this, take Orpiment of a Yellow Orange Tawny, well pouder'd Chryſtalline, white Arſnick, crude Antimony, and Sal-Armoniack, of each Two Ounces, pouder and mix them very well, and put them into a large Crucible, and upon them Pieces of Chryſtal, of a fair Water, without any Spots. Let the Chryſtal be ſomewhat large, and fill the Crucible, and lute on it another, Mouth to Mouth, making a Hole at the bottom of the uppermoſt, as big as a Straw, that the Air may get in to evaporate the Fumes. When the lute is dry ſet them in the Coals, ſo that all the lowermoſt, and the one half of the uppermoſt may

be buried in the Coals; so kindle the Fire by degrees, and do as in preparing the other Chrystal, to avoid the Fumes, which will be long; therefore keep a constant Fire, very strong, and keep out all cold Air, lest the Chrystal being brittle, break, and so well cooled, as the other, the Colour will appear.

To make Glass of Lead, as red as Blood.

To do this, put into a Pot six Pound of Glass of Lead, ten Pound of Chrystal Frit, and when purified, cast them into Water; then return them into the Pot, and when they are well refined, put in five or six Ounces of Copper calcined to a Red Pouder, and let them boil up and refine; after that put in a little Red Tartar in Pouder, and let the Metal boil up again, and well incorporate, and take an Essay, and if the Colour be not come up to a height, put it again to anneal, till it comes to its Colour.

To recover the faded Colour of natural Turquois.

Put it into a Glass, and pour on it the Oil of Sweet Almonds, keep it warm, on temperate Ashes, and in two Days the natural Colour will return very beautiful.

To make Vitriolum Veneris, *used in Colouring Glass, and in some places mentioned.*

Set covered Crucibles in an open Wind-Furnace, with burning Coals; let them stand two Hours, then suffer the Furnace to cool of it self, so take out the Crucibles, and you will find the Copper you have put in, calcined to a blackish or dark Colour, or obscure Purple, which poudered and well searsed, put into an Earthen

Earthen Vessel that will hold the Fire; set that in an open Wind Furnace, on cross Iron Bars, fill the Pans with lighted Coals, put in the calcined Copper, adding to every Pound Weight six Ounces of Brimstone poudered, and when the Brimstone begins to flame, keep it continually stirring, till the Brimstone be consumed, and the Smoak cease; then take it out hot; do this by renewing three times, and you will have a curious Pouder, fit for your Purpose, for being infused in Water, in a Retort for many Hours, and well luted: The curious and finest settling separated, is excellent to mix when dry, with Zaffer, and put to Chrystal Frit, makes a marvellous Sea-Green, and in many other Cases, an Azure or curious Sky-Colour.

CHAP. III.

To make curious Enamels of divers Colours, after the best manner, for Gold and Silver Works, and other Metals. To fix Sulphur, extract Animum Saturni, *&c.*

The Ground-Work of Enamels.

TAKE thirty Pound of fine Lead, thirty three Pound of fine Tin, searse them when they are well calcined in a Kiln, boil this Calx a little in clean Water, in Earthen Vessels, and when you take it off, decant the Water, by inclination, and in it will be the finer part of the Calx; pour fresh Water on the remainder, boil and decant it as before, and so do as long

as the Water carries off any Calx, and then re-calcine that which remains Groſs, and draw off the more ſubtil part of it, as before; after that evaporate the Water that carried off the finer Calx over a gentle Fire, that the Calx may not fly out with it, and be waſted, but remain in the bottom. Then take Chryſtal Frit, in[illegible] with Taſſo, finely ground, and of this C[illegible] each of them Fifty Pound, white Salt of [illegible] tar Eight Ounces, pouder, fearce and well mix them; then put the Compoſition into a new Earthen Pot, giving it a Fire for Ten Hours, then pouder it, and keep it cloſe covered in a dry Place, and of theſe Materials all the Ground of Enamels are made, of what Colour ſoever.

Materials or Utenſils for this Work.

In this curious Work, which is in high eſteem, and very profitable, it will not be amiſs to ſet down the Materials or Utenſils to be uſed, and therefore firſt obſerve, that the Pot wherein you make the Enamels, muſt be well glazed with white Glaſs, and that it bear the Fire well.

2. Incorporate and well mix the Stuff, and Colour of the Enamels.

3. When it comes to be refined, ſo that the Colour proves good, and all well incorporated, take it off from the Fire with a pair of Tongs for the Goldſmith's Uſe.

The Way of making Enamel.

To make Enamel, pouder, fearce, and grind well the Colours; having mixed them one with another, as the Occaſion requires, then with the Stuff of the Enamel, ſo ſet them in Pots in the Furnace, and being melted and well incorporated, caſt them into Water, and being dry, ſet them

them again in the Furnace to melt, which will be soon effected, so make an Essay or Proof, and if the Colour be too high, take out some of it, and add more of the Stuff of the Enamel, and if too light, add more of the Colour, till you bring it to a due Proportion.

To make white Enamel.

Take six pound of the Stuff for Enamel 48 Grains of Maganese, cast it thrice into Water, and being refined, melt it, and it will produce a curious white Enamel.

Turquois coloured Enamel.

Take Six Pound of the Stuff of Enamel, melt, refine, and cast it into Water, then again set it in the Furnace, and when it is melted, and well refined, put in Three Ounces of calcined Brass, at thrice, Ninety six Grains of prepared Zaffer, and Forty Eight of Maganese likewise prepared; mix these well every time, and let them incorporate; make a Proof with your Eye, as to the Colour, and when you find it Right, take it out, and keep it for use.

A Green Enamel.

Take Four Pound of the Stuff for Enamels, place it in the Furnace, and in Ten or Twelve Hours it will be melted and refined, so cast it into Water, and place it again in the Furnace in its own Pot, and being refined, put in Two Ounces of Brass thrice calcined, mixed with Two Ounces of Scales of Iron well ground, put these in at Three times, mixing and incorporating them well every time, and so work it up to a pure Colour, and take it from the Fire, &c.

To

To make Violet-coloured Enamel.

Take six Pound of the finest Enamel Stuff, three Ounces of Maganese well prepared, forty eight Grains of thrice calcined Brass, mix the Powders very well together, and then do the like with the Enamel Stuff; put them into the Furnace, cast them into Water, and being dry, put them again into the Furnace, and when the Stuff is refined and well coloured, make it up for use.

To make a Sky-coloured Enamel.

Take four Pound of Enamel Stuff, Brass of Sky-Colour, and Sea-Green, each two Ounces, prepared Zaffer forty eight Grains, and mix them well; then in all things else use them as the former.

To make Purplish Enamel.

Take six Pound of the Stuff for Enamels, two ounces of Maganese prepared, of Brass thrice calcined six Ounces, mix them very well together, set them in the Furnace, and in all things else use or order them as in other Enamels.

To make Gold Colour, or Yellow Enamel.

To make this, take six Pound of Enamel Stuff, three Ounces of Tartar, seventy two Grains of Maganese prepared, grind and mix the Powders well together, and after that, with the Stuff of the Enamel, melt and order them as other Enamels, and it will be of a fair Golden Yellow, proper to Enamel on Gold; but it will not shew so well there, unless it be worked on with other Enamels, that may make a pleasing Variety of Colours.

A Black Enamel to make it.

Take four Pound of the Enamel Stuff, Maganeſe and Zaffer prepared, each two Ounces, mix them well together, and then incorporate them well with the Stuff; put the Pot, with theſe Materials, into the Furnace; let the Pot be large, and when they are melted and refined, caſt them into the Water; then put them into the Furnace again, and they will quickly refine, and become of a curious Velvet-Black.

Another curious Black Enamel.

Take four Pound of the Stuff of Tartar, four Ounces, well prepared Maganeſe two Ounces, mix and grind them well, and then mix them well with the Enamel Stuff, and in melting and refining, uſe them as other Enamels.

A Red Enamel.

Take of Enamel Stuff four Pound, put to it two Ounces of Maganeſe prepared; mix them well, and ſet them in the Furnace, in a large Pot, and being melted, and refined, caſt it in Water, melt, refine, *&c.* again.

To make an Azure Enamel.

Take four Pound of Enamel Stuff, prepared Zaffer two Ounces, mix with it at firſt, of thrice calcined Braſs, forty eight Grains, and when the Pouders are well mixed, mix them with the Stuff, and ſo order them in melting and purifying, as other Enamels, the melting, *&c.* being all one in every caſe.

Another curious Green Enamel.

Take ſix Pound of Stuff, mix with it three Ounces

Ounces of Ferretto of *Spain*, well ground, and Forty eight Grains of *Crocus Martis*, and being well mixed, melt and purifie them as the former Enamels.

Another curious Green Enamel.

Take Four Pound of Enamel Stuff, refine it well in a Pot, in the Furnace, then cast it into Water, and put it into the Pot and Furnace again, so refine it; then put in at Three times thrice calcined Brass Two Ounces, of *Crocus Martis* made with Vinegar, Forty eight Grains; then melt and refine them again, with incorporating the Powders.

Another Black Enamel.

Take Six Pound of Enamel Stuff, prepared Zaffer, *Crocus Martis* made with Vinegar, and of Ferretto of *Spain*, each Two Ounces, grind and mix the Powders well together, and then incorporate them with the Stuff, and order them in the Fire and Water, according to the usual Rule.

A fair Red to Enamel Gold.

Take Chrystal Frit, made of Salt of Pulverine, Ten Pound, white Tarso finely ground, Eight Pound, make a substantial Stuff with this Frit and Water, rowl it into thin Wafers, put them into an Earthen Pan, into a little Furnace, made in the Fashion of Calcar, that they may be calcined about Ten Hours with a good Fire, and for Defect thereof, put them in the Furnace, near the Occhio, Three or Four Days, till they be well calcined; take prepared calcined Lead, and Tin, and of Tartar Wine calcined, each Two Pound, mix these well together;

ther; put them in a well glazed Pot, glazed with white Glaſs, and when melted, and pretty well refined, caſt the Metal into Water; ſo melt and refine it again; then put in the red Pouder of calcined Copper 12 Ounces, and when the Colour is well purified, add *Crocus Martis* made with *Aquafortis*, put it in by degrees, and give it leave to ſettle ſix Hours, make a Proof to ſee if the Colour is good, if not, heighten it with more *Crocus Martis*.

To fix Sulphur for this Work.

Boil the Flour of Brimſtone an Hour in common Oil, and being taken off the Fire, caſt upon it ſtrong Vinegar, and the Sulphur of a ſudden will ſink to the bottom, and the Oil will be on the top of the Vinegar, then empty the Oil and Vinegar; then put freſh Oil on the Sulphur; repeat this thrice, and then you will have a fixed Sulphur proper for the Work.

To extract Anima Saturni, *uſeful in Enamel.*

Put well ground Litharge into an Earthen glazed Pan, pour diſtilled Vinegar upon it, let it be four Fingers above it, and let ſtand till the Vinegar is of a milky Colour; then decant it off, and put freſh Vinegar upon the Litharge; do this till the Vinegar becomes no more coloured, then let the coloured Vinegar ſtand in glazed Pans, that the milky Subſtance of the Litharge may ſink to the bottom; then decant off the clear Vinegar, and the remaining milky Subſtance is the *Anima Saturni*: And if in this caſe the white Stuff precipitate not well, caſt upon it cold Water, which uſually makes it fall to the bottom, and when it does not precipitate, evaporate the Water and Vinegar.

CHAP.

CHAP. IV.

The Art of making Calcedony like Jasper, Agates, and other lucid Stones, with their Clouds, Shadows, Spots, Waveings, and many other curious Embellishments, and to prepare the Materials useful in the Work.

TO make curious Waveings, and other mixtures of Colours, that surpass the Workings of Nature in Calcedony, &c. I shall lay down such perfect Rules as have not hitherto been distinctly known but to a very few: And,

1. Put two Pound of *Aquafortis* into a Glass Body, not very large, but with a long Neck, and four Ounces of fine Silver, in fine small Pieces very thin, set them in warm Water or near the Fire; and as soon as the *Aquafortis* heats, it will work and dissolve the Silver; then take a Pound of *Aquafortis*, and in it dissolve six Ounces of Quick-Silver; mix these two Waters together in a greater Body, and pour them on six Ounces of *Sal Armoniack*: Let it dissolve at a gentle Heat, then put into the Glass one Ounce of Zaffer, and half an Ounce of Maganese, all well prepar'd; also half an Ounce of *Ferretto* of *Spain*, and a quarter of an Ounce of *Crocus Martis*, calcined with Brimstone; also thrice calcined Copper, blue Smalt, and red Lead, each half an Ounce, let them be finely poudered, and put one after another into the Body, which stir so gently, that the *Fortis* may be incorporated with them, and for ten Days keep the Body close stopped, every Day shaking

ſhaking it divers times; and ſo being well opened, put it into a Furnace on Sand, and make ſuch a temperate Heat, that in twenty four Hours all the *Aquafortis* may be evaporated; then in the bottom there will remain a Lion Colour, which being reduced to fine Pouder, keep it in a ſtrong Glaſs Veſſel.

When you prepare to make a Calcedony, put into a Pot broken Chryſtal, made into a clear Metal, and white Glaſs and Chryſtalline which has been uſed, for with ſuch Frit as has not been wrought, it cannot be made; for the Colours ſtick not to it, but are conſumed by the Frit, To every Pot of twenty Pound of Glaſs, you muſt put two, or two Ounces and a half of this Pouder, and ſometimes three Ounces; put it in at thrice, that it may the better mix and imbody; and in this doing, certain blue Fumes ariſe, and when it mixes, let your Glaſs ſtand about an Hour, then put in another Mixture, and let it ſtand twenty four Hours, ſo it will be well mixed.

This done, eſſay it, and it will have a yellowiſh Azure Colour; this Proof many times returned into the Furnace, and taken when it begins to cool, will ſhew divers wavey and very fair Colours: After this, take eight Ounces of Tartar, Soot of the Chimney well vitrified, *Crocus Martis* calcined with Brimſtone half an Ounce, put it on by degrees, mixed in fine Pouder, at ſix times; taking a little Interval between each putting in, mixing it with the Glaſs, ſo that it may be well incorporated, and when all the Pouder is in, let the Metal boil and purify twenty four Hours: Make of it a little Glaſs Body, which put in the Furnace many times; then try if it be enough, and there be

be blue Toys on the out-side, Sea-Green, Red, Yellow, and all Colours with Toys; and that it is illustrated with Waves, such as Calcedony, Jaspers, or oriental Agates have; and that to the Sight, the Body kept within, appears red as Fire.

When this Body is made and perfected, you may work it into Vessels, always variegated and new made, for they do not rise well; but he that works it must observe to pinch off well the Glass, and aneal it sufficiently, that it may make Waves and Toys of the fairest Colour; and afterwards you may work it at the Wheel, for it takes Polishing and a very fine Lustre, as Jewels.

If it happens, that the Colour fades, and the Glass becomes transparent, then leave off working, and put to it new Tartar calcined, Soot and *Crocus Martis*; for thus, as before, it takes a Body and Opacousness, and the Colour by that means will appear; so let it purifie many Hours, that as it is usual, the Pouder newly put in, may be incorporated, then work it.

Another curious way to make Calcedony, &c.

Dissolve Three Ounces of fine Silver in a Pound of *Aqua-fortis*, cut small and thin, in a glass Body, and so set it aside.

In the next place, put a Pound of *Aqua-fortis* in another Glass, and dissolve in it Five Ounces of well purified Mercury, and close the Body well.

Put another Pound of *Aqua-fortis* into another little Glass wherein is dissolved two Ounces of *Sal Armoniack*, then put in *Crocus Martis* made with *Aqua-fortis*, *Ferretto* of *Spain*, Copper calcined into red Pouder, and Brass calcined

ned with Sulphur, of each half an Ounce; grind and well Pouder theſe Materials by themſelves, and put them in one by one into the Body by degrees with leiſure, becauſe they all of them ariſe much.

In another little Glaſs Body, let there be a Pound of *Aqua-fortis*, diſſolve in it an Ounce of *Sal Armoniack*, *Vitriol* purified, crude Antimony poudered, Azure, or blue Smalt, of each half an Ounce, red Lead an Ounce, grind them well and ſet them by in a Veſſel.

In another Glaſs Body, diſſolve in a Pound of *Aqua-fortis*, Two Ounces of *Sal-Armoniack*, add an Ounce of prepared Zaffer, and a quarter of an Ounce of prepared Maganeſe; of Cinnabar an Ounce, and half an Ounce of thrice calcined Copper, put them warily in, well poudered, every one by its ſelf, that you may avoid the Fumes that will ariſe.

In another Glaſs put Two Ounces of *Sal-Armoniack* to a Pound of *Aqua-fortis*, then add Verdigreaſe, Cerule, red Lake, and Scales of Iron, each half an Ounce, let all theſe Bodies ſtand Twelve Days, ſhaking every one of them Six times every Day, ſo the *Fortis* will penetrate and ſubtilize the Metal and Ingredients, the better to communicate the Tincture of the Colours to the Glaſs.

When this Work is thus far brought to paſs take a great Glaſs Body well luted at the bottom, and empty into it all the Materials of the other little Bodies by degrees, that they may not make the Glaſs crack or run out in this great Body; ſo mix the Waters, that the Materials may be well incorporated, ſo ſet it in the Aſhes at a very gentle Heat, for too much Heat waſtes the pouders, ſo that the *Fortis* being evaporated,

ted, there will remain a reddish Pouder at the bottom, which keep close in a Glass Vessel for Use.

When you design to use it, put it into the Metal of broken pieces of Glass that have been used, doing now as in the former, giving the Metal the same quantity of Time, and use the like distance; then add the Body of burnt Tartar, Soot of the Chimney vitrified, and *Crocus Martis* made with Vinegar, suffer them then to settle Twenty four Hours, and work it in all respects as the former, and it will produce Wonders.

To make divers Things useful in this Work; and first to purify Vitriol to make strong Aquafortis.

To do this, take the best Vitriol, and dissolve it in common warm Water, let it stand three Days till it is impregnated with Salt; so filter and evaporate it in Glass Bodies till two Thirds of the Water is consumed; put the remainder into earthen glazed Vessels, set them twelve Hours in a cold place, and the *Vitriol* will shoot into pointed pieces, appearing like natural Chrystal of a fair Emerald Colour. Let this *Vitriol* be dissolved again, do as before, and thrice repeat it at each dissolving; there will remain at the bottom a yellowish Substance, which is unprofitable Sulphur, and must be removed.

At the third time you will find the *Vitriol* so purified, that it will make a strong *Aqua-fortis*, particularly if the Nitre be well refined.

A good way to burn Tartar.

Take Tartar of Red Wine, in great Pieces full of Spots, put it into new Earthen Pots, let it burn till it smoaks no more, in a pretty good Fire,

Fire, and being calcined, and in Lumps of purplish Colour, it is well calcined, and prepared for use.

Aqua-Regis, *how to make it for this Work.*

To every Pound of *Aquafortis*, made as before, put into a Glass Body two Ounces of *Sal-Armoniack* well poudered, set it in an Earthen Vessel of warm Water, often stirring the *Aquafortis*, which having dissolved the *Sal-Armoniack*, will be tinged with a yellow Colour, then put in more *Sal-Armoniack* whilst the *Fortis* will dissolve no more; then let it have a little setling, and when it is clear, decant it off very leisurely, and the unprofitable Dross of the *Armoniack* will remain in the bottom, and this *Aqua-Regis* will be of force sufficient to dissolve Gold and other Metals, but it will not do the like by Silver,

CHAP. V.

To prepare Materials, and make artificial Precious Stones in imitation of the true ones; as Topaz, Emeralds, Chrysolites, Garnet, and other oriental Stones, of a very curious Lustre, differing from the true ones only in hardness, as being of equal Beauty; and to colour Balls or Globes of Glass within side, &c.

The Ground of this Work, in preparing Natural Chrystal.

TAKE the cleerest Chrystal you can get, free from Spots, in pieces; put the pieces in Crucibles

Crucibles covered at the top, and set them in hot burning Coals, and when thoroughly heated, put them into a large Pan of cold Water, and being cold, dry and re-calcine it, and throw it into Water; and so do successively twelve times, keeping all Ashes and Filth out of the Crucible, and being sufficiently calcined, grind it to an impalpable Pouder, as fine as Meal, on a Porphiry Stone, with a Muller of the same; grind about a Spoonful at a time, and often searse it, till no roughness remains to be felt in the Pouder, lest it make the Work dirty or imperfect; and this is the Ground Work to mix with all Colours, for making artificial Jewels of Paste, as will appear hereafter.

Materials useful in this Work, and other Matters.

Observe to lute well the Pots wherein the Chrystal is calcined, and the Pastes are baked, with good dry lute, before you either calcine or bake; and be sure to take pots that will well endure the Fire, and in all respects keep a just Proportion in the Dose of the Ingredients.

Always observe, before you bake the Ingredients, to mix them very well, and if it fail to be thoroughly baked at first, you must do it again in a Potters Furnace; and break not the Pot till it is sufficiently done, for if you do, it will be full of Blisters, and foul.

Observe always to leave a Vacancy of a Finger's thickness on the top of the Pot, particularly where it is held to swell much, or that you must put it in with Care and Leisure, to prevent the Materials running into the Fire; or if it stick to the Cover, the Colour will be foul. Having given you these Rules or Directions, I now proceed to the making several sorts of artificial Jewels.

To

To Imitate Topaz.

Take two Ounces of prepared Chryſtal, ſeven Ounces of the ordinary *Minium*, mix and bake them according to Art, for a marvellous Oriental Topaz Colour; with which you may work what Works you pleaſe.

A Fair Emerald Imitated.

Take two Ounces of prepared Chryſtal, ſix Ounces of ordinary *Minium*, mix theſe extreamly well together, adding eighty Grains of fine Verdigreaſe well ground; mix and bake them to work a fair Emerald.

To make a deep Emerald Colour.

To do this, take two Ounces of prepared Chryſtal, ſix Ounces and a half of common Red Lead, mix them, and add of Verdigreaſe about three Penny Weight, and thirteen Grains of *Crocus Martis* made with Vinegar, ten Grains; mix them exceeding well together, and work it fit for baking: And to ſee when this, or other Coloured Paſtes are baked enough, purified and tranſparent, take off only the Cover made of Lute, and if it be ſo to the bottom it is enough, if not, you muſt preſently re-lute, and bake it again, not breaking the Pot, for the Reaſons before mention'd; and let the Fire be continued with dry Wood twenty four Hours, and ſo you will have a marvellous Colour for ſmall Works, and to be ſet in Gold.

But obſerve, this Emerald Paſte muſt have a more than ordinary baking, to conſume the Imperfection the Lead brings upon it; and though it is ſomewhat brittle, it is excellent ſhining and tranſparent.

To imitate Oriental Chrysolites.

Take two Ounces of Chrystal prepared, and eight of ordinary *Minium*, and when they are well mixed, put to them twelve Grains of *Crocus Martis* made with Vinegar; bake it more than ordinary, and it will come out very fair.

A Sky and Violet Coloured Paste.

Take prepared Chrystal two Ounces, and four Ounces of ordinary *Minium*, add four Grains of fine blue Smalt; well mix them together, and when well baked, there will be a curious Violet, and fair Sky-Colour.

Saphires to imitate in Paste.

Take six Ounces of ordinary *Minium*, and two of Chrystal prepared, and when they are well mixed, add five Grains of prepared Zaffen, and the like of Maganese; mix and bake the Paste well, and it will produce a curious Saphire Colour.

To imitate Garnet in Paste.

To do this, take six Ounces of ordinary *Minium*, two of prepared Crystal; when these are well mixed, put sixteen Grains of prepared Maganese, and three Grains of prepared Zaffer; mix the Paste well, and when it is baked, it imitates a fair Garnet.

A way to make Paste, to imitate all sorts of Precious Stones.

To do this, take Ceruse or white Lead, grind it as fine as fine Wheat-Flower, so put it in a great Glass Body, and put to it as much good Vinegar as will cover it four Fingers upward, putting it in by little and little, till the Fury and

and Noise of the boiling and swelling of it is over; so set it on a hot Furnace in Sand, that the eighth part of the Vinegar may evaporate; take it from the Fire, and letting the Body cool, decant it leisurely; the Vinegar being sufficiently coloured and impregnated with Salt, put it aside in a Glass Vessel, and pour fresh Vinegar on the remaining Lead; let this Vinegar be distilled, and decant it as before. Do this till all the Salt is contracted from the Lead, and that will appear when the Vinegar will take no further Colour, nor has any more Tast of Sweetness, which generally happens after the sixth time of decanting.

The Work being thus far proceeded in, filter the coloured Vinegars when mixed together; and evaporate and dry them in a Glass Body, and at the bottom you will find the Salt of the Ceruse of a white Colour.

Set this in a Glass Body in Sand, being well luted from the Neck downwards, but let the Mouth be open, and the Heat of the Furnace contracted for twenty four Hours; then take out the Salt, and if it be yellow, and not come to a Red, it must stand twenty four Hours longer in the Fire, and when it is of the Colour of Cinabar, it is enough prepared; then make such a Fire as may not melt it, for if it melt your Labour is lost.

Pour distilled Vinegar on this calcined Lead, repeating as before, till you have extracted all the Salt from it; and then separate the Terrestreity in part or in the whole; and keep this coloured Vinegar in glazed Earthen pans six Days, that so all the settling and imperfection may sink to the bottom; then put the several Vinegars into a Glass Body, and cover it, and

after ſome time ſtanding, a white Salt of Lead will be at the bottom; ſo filter it, that the groſſer and unprofitable part may remain behind, and cover the Vinegar in a Glaſs Body, and at the bottom you will have a white Salt, as ſweet as Sugar, which you muſt dry well, and then it being diſſolved in common fair Water, let it ſtand in Earthen glazed Pans ſix Days; then take away the Sediment, and filter and evaporate as before, and there will remain a Salt as white as Snow. Do this thrice in the ſame manner, and being thus prepared, it is known by the Name of *Saccharum Saturni*, which put into a Glaſs Body in Sand, and ſet it in a Furnace at a temperate Heat for ſeveral Days, and when calcined, it will appear of a colour redder by far than Cinabar, and as ſubtil and impalpable as the fineſt ſearſed Flower, and ſo it is called the true *Sulphur of Saturn*, purified from all Terreſtreity.

When you would make Paſte for Saphires, Emeralds, Topaz, Garnet, Chriſolites, Sky, or any different Colour, take the ſame Materials, Quantities and Colours, as in the foregoing Receipts; except that inſtead of ordinary red Lead, (where that occurs in any of them,) you ſhall take *Sulphur Saturni*, working in every thing as before directed; and ſo you ſhall imitate Jewels of marvellous Beauty, which far ſurpaſs any yet mentioned, where ordinary red Lead is an Ingredient.

Directions how to Colour Balls of Glaſs, or other white Glaſs within, of marvellous fair Colours.

Take any Orbicular Glaſs that has a cavity within, and ſeaſon it in warm Water; after that Infuſe Izing-Glaſs two Days in fair Water, then put the Infuſion into a white Pan, boil it till

till all be well tempered, then take it off, and when it is warm, put it into a Ball of Glaſs, *&c.* Turn the Glaſs about, that it may wet and faſten well every where within the Glaſs, ſo let the moiſture drain; then with a hollow Tube or Pipe, blow finely poudered red Lead into it in all parts, that it may run on the moiſture, and wave up and down; after that blue Smalt, and then Pouder of Verdigreaſe, all very fine, with Lake well ground, ſo that they may wave and intermix to make a curious Colour; and when they ſtick well, take Geſſo well poudered; put a good quantity of it into the Ball, and ſuddenly turn it about, then put out the Superfluity, and the inſide being dry, many curious Colours will appear.

CHAP. VI.

To extract Lake and other curious Colours, from Flowers, Herbs, Seeds, and other things, for Painting, Limning, &c.

To extract Lake from Red Roſes, Wild Poppies, Red Violets, Flower-de-Luce, Orange, Borage, Carnation, or other Flowers.

TO do this, take what quantity you will of the Leaves of the Flowers, which being bruiſed on a Leaf of white Paper, tinges it with its Colour; you may aſſure your ſelf of Succeſs, but thoſe Herbs or Flowers that do not ſo, are not ſerviceable in this way.

This Experiment being made, put ordinary *Aqua Vitæ* into a Glass Body, the Head as large as may be; and in the top put the Leaves of such Herbs and Flowers from which you would draw a Tincture; then lute the Joints of the Head, and fit a Receiver to it, so give it a temperate Heat, that the more subtil part of the *Aqua Vitæ* ascending to the Head, and falling on the Flowers, may suck out the Tincture, suffering it to do so, so long as it comes coloured; after that, distil the coloured *Aqua Vitæ* in a Glass Vessel, which will be over-white at its coming forth, and is fit for use in this nature, at other times; and then the Tincture remaining at the bottom, must not be over dried, but care taken that it may be moderately done; and so you may have the Tincture of curious Lake from all Flowers and Herbs fit for Limning, and other Beautiful Works.

To Yellow Lake, extracted from Broom-Buds, or other Yellow Flowers that have a good Tincture, another way.

Make a Lee of Lime and Barilla tolerably strong, and in it over a gentle Fire boil fresh Broom-Flowers, having their full Sap or Substance in them. Order it so, that the Lee may draw to it all the Tincture of the Flowers, which will be known by their turning White, the Lee being then as Yellow as Trebean Wine; after that, take out the Flowers, and put the Lee into glazed Earthen Dishes, let it at a moderate Heat; after that, let it boil by degrees, and put to it so much Roach Alum as may well dissolve with the Fire. When it is well ordered,

put

put the Lee into Veſſels of fair Water, and the Yellowneſs will ſettle at the bottom; ſo when the Settlement is made, decant off the Water, and pour on that which is freſh; and when the Tincture is ſunk, order it as the former. Do this till the Salt of the Lee is quite taken out, as alſo the Taſte of the Allum, and then the Tincture of the Colour will be the fairer, and do ſo till the Water runs out ſweet, without any Saltneſs, with the ſame Taſte as when it was put in; and then at the bottom you will find a curious and beautiful Lake for uſe, and whilſt it is wet, ſpread it upon a piece of white Cloth, and dry it in the Shade upon new baked Bricks, and keep it dry, and as much from the Air as may be; and theſe two ways at your Diſcretion, you may extract Colours from any Flowers or Herbs, that have natural Tinctures.

To make a Curious Blue, or Sky.

Take three parts of the Flower of Brimſtone, two of Quick-Silver, and eight parts of Sal-Armoniack; grind theſe well on a Porphiry-Stone, and with the Quick-Silver put them into a long necked Glaſs, well luted at the bottom; ſet it in Sand, and make a gentle Fire till the moiſture riſes, then let the Glaſs be ſtopped at the Mouth, and encreaſe the Fire as in Sublimation, till the end; and a very illuſtrious fair Blue will be the reſult of your Labour.

To make that Embelliſhment, called the Mixture of the Spheres.

Take purify'd Tin that is well purged, three Pound, Copper well purified one Pound;

melt first the Copper, then the Tin, and being well melted, cast upon them six Ounces of Tartar of Red Wine, only burnt, and of Salt-Petre an Ounce and a half, and two Ounces of Arsnick, and a quarter of an Ounce of Allum finely poudered; suffer them to evaporate, and then cast them into the form of a Sphere, which Metal may be curiously burnished and Polished, and will shew rare in the mixture for Spheres.

A Lake to be drawn from Cochineel.

Infuse in cold Water, a Pound of the Shearings of the finest Woolen Cloth a Day, and so press it well to take away the Oilinesss of the Wool; then in this manner Allum the Shearings, *viz.*

Take of Roach-Allum four Ounces, and two of crude Tartar finely poudered, one of Cochineel; put these into a little Pipkin, with about four quarts of Water, and when this begins to boil put in the Flocks; let them boil over a gentle Fire half an Hour, so take them off, and suffer them to cool six Hours, then take them out, and wash them well in fair Water; and when the Water is well soaked in them, by standing two Hours, press it out, and let the Flocks dry. Evaporate the Water, and at the bottom you will find a Sediment of a curious Tincture, as also in the Flocks.

Lake of Brazil and Madder.

In this case, you must work each of them by themselves, but use not so much Allum by an Ounce, as you did before, because the Tincture of the Cochineel is deeper than that of Brazil

Brasil and Madder; wherefore give them their due Proportion, which you will soon find by Practice; and to one Pound of Flocks use more Brasil or Madder for Weight. They have not so deep a Tincture as Cochineel has. Work in all Points as in the former, and you will have a very fair Lake.

Lake of Cochineel, another and more easy way.

Take a Pound of Roch-Alom, well poudered, into a Pottle of *Aqua Vitæ*, of the first running, and being well dissolved, put in an Ounce of Cochineel in Pouder, very well sifted; do as in the former, and put the Materials in a Glass Body, having a long Neck; shake it well and often, that the *Aqua Vitæ* may be well tinctured; so permit it to stand the space of four Days, then pour it out into a clean glazed Earthen Pan, and in common Water dissolve four Ounces of Roch-Alom; put it into the coloured *Aqua Vitæ*; put it into *Hippocrates*'s Sleeve, or a Woolen Bag, and for the rest, order it as the other Cochineel Lake, and it will very much profit you.

CHAP. VII.

The curious Art of Painting Glass in various Figures and Colours, in Oil, and annealing and burning of the Colours in a Furnace, to be more lasting and durable against all Weathers, a rare Secret.

SEEING all People have not the Advantage or Conveniency to make Glass of divers Co-

lours, in a ſolid Body, it will be proper in this Work to give an inſight into the ſuperficial Colouring or Painting it with Colours that ſhew fair on the outſide, though they penetrate not; and in the firſt place, I ſhall ſpeak of the Colours proper for to be uſed in this Art, and then proceed to Directions for uſing them.

For a fair Yellow.

Take a fine thin piece of good Silver, dip it into melted Brimſtone, and when it has lain there a while, take it out with Plyers, light it in the Fire, and hold it till it has done burning; then beat it to fine Pouder in a Braſs Mortar, and grind it with Gum Arabick, and a little yellow Oaker.

A Gold coloured Yellow.

Take a Dram of fine Silver, Antimony in Pouder, two Drams, put them in a crucible into a very hot Fire, about half an Hour, then caſt it into a Braſs Mortar, beat it into Pouder, and put to it ſix Drams of Yellow Oaker, old Earth of ruſty Iron ſeven Drams, grind them exceeding fine for your uſe.

To make a curious Blue Colour.

For this purpoſe, take the cleareſt Leads you can get of that Colour, beat them well in a Braſs Mortar, take Enamel of the ſame Colour very tranſparent, grind each of theſe by it ſelf, then take two parts of Lead and Enamel, and grind them together as you did the Silver.

A fine Carnation Colour.

Take four Drams of Jet, Tin, or Litharge of Silver two Drams, Gum and Scales of Iron, each

each one Dram, and of red Chalk one Ounce, grind theſe fine, and mix them well together.

A Velvet Black.

Take the Scales of Iron and Jet, each a like Quantity, mix them well together for uſe.

Another curious Black.

To make this, take Scales of Copper and Iron, each a Dram, heat them hot in a Crucible, then take half a Dram of Jet, grind them ſmall, and temper them well with Gum Water.

A curious White.

Make this of Chryſtal, ground as fine as Meal, and though it be of natural white Glaſs Colour, it ſerves curiouſly to Diaper up it, and for other uſes.

A Pleaſant Green.

Take dried Verdigreaſe, and grind it well with Turpentine, put it into a glazed Earthen Pot, and when you uſe it, warm it ſo that it may run and ſpread well, and ſo be pliable to the Work.

A fair Red Colour.

Pouder Sanguis Draconis, and put to it rectify'd Spirit of Wine, and when it has been a while cloſe covered, it will grow very tender; wring it out into an Earthen glazed Pot, that the Droſs may remain in the Cloth, and keep the fine liquid part for uſe.

Another Carnation, very pleaſant.

Take Jet three Drams, Red Oaker five Ounces, Tin Glaſs an Ounce, Gum two Drams, grind theſe well together, and you will have a fair Carnation.

The Manner and Ways of Painting on Glass.

The manner of this is two fold, *viz.* in Oil Colours, and such Colours as are afterward to be annealed and burnt on.

To lay Oil Colours.

To lay Oil Colours on Glass, you must first grind them, once with Gum-Water, then temper them with Spanish Turpentine, and so lay them on according to Art, in Figures, or otherwise, and let them dry by the Fire, and the Work is finished.

To Anneal or Burn Colours on Glass.

To do this, and make the Colours abide well, you must have a four Square Brick Furnace, a Foot and a half broad, and as much in depth, lay five or six Iron Bars on the top of it, and raise the Furnace about eight Inches above the Bars; then lay over the Bars a Plate of Iron, and sift on it slacked Lime, and upon the Bed of Lime lay a Row of Glasses, then cover them with Lime, and lay on another Row of Glasses, and so on, till the Furnace be filled.

Lay likewise with every Bed of Glass, a waste Piece, that you may wipe over with any Colour. These are termed Watches, and so when you think the Glass is sufficiently burned, with a pair of Plyers take out the lowermost and uppermost Piece or Watch; lay it on a Board, and when it is cold, use your Endeavour to scrape off the Colour; and if it hold well on those Rows from whence you took them, they are sufficiently done, and will hold their Colours against all Weathers, and by this Rule try all the rest, and prosper in your Work.

CHAP.

CHAP. VIII.

The curious Art of Gilding divers sorts of Metals with Leaf and Water Gold, laying on Silver, &c.

To lay Gold upon Metals, Wood, &c.

GRind Red Lead very fine, temper it with Linseed Oil, strike it gently, and very thin over with a Pencil; let the Gold Leaves be layed on very even, and when well dried, burnish the Piece, and it will cast a curious Lustre, and in this manner Silver is laid on.

To lay Gold on Glass.

Take red Lead and red Chalk, of each a like quantity, grind them well together, and temper them with Linseed Oil, lay it on as the former, and when it is almost dry, lay Leaf Gold on it, exactly even, and being full dry, polish it.

To Gild on Stone or Wood.

To do this neatly, take Oil of Ben, and Bole-Armorick, of each a sufficient quantity, beat and grind them well together, and finely smear the Wood or Stone with it, and being almost dry, lay on Leaf Gold, as before, and being well dried, polish it, and it will stick and shine gloriously.

To Gild, that the Water shall not injure it.

Take calcined Oaker, Pumice Stone, of each a like quantity; add a little Tartar, and beat them with Linseed Oil, then drop a few Drops of fine

fine Varniſh, ſtrain theſe, well mixed, through a fine Linen Cloth, and ſo you may gild with it.

To gild Iron or Steel.

To do this, take an Ounce of Tartar, three Ounces of Vermillion, Bole-Armorick and *Aqua-Vitæ*, each two Ounces, grind theſe with Linſeed Oil, and put to them half an Ounce of *Lapis Calaminaris*, finely poudered, grind again with a few Drops of Varniſh, and ſo take them off the Stone; ſtrain it, that it may be the Thickneſs of Treacle, and ſo ſtrike it thin and gently over the Metal, when warm; and when it is near dry, lay on your Silver or Gold, and burniſh it.

A Water to gild Knives, Steel, Swords, Iron, Armour, &c.

Pouder Fire Stone, and put it into ſtrong Red Wine Vinegar; let it remain in it 24 Hours, boil it in a Gallon-Pot, putting in more Vinegar as the other evaporates. Into this Water dip the Metal, and at firſt it will be Black, but being dried and well poliſhed, under that Blackneſs, there will be a curious Gold Colour.

Another curious Way for Water Gilding.

To do this, take of Roch-Alom three Pound, Roman Vitriol three Ounces, Orpiment an Ounce, Verdigreaſe twenty four Grains, Sal Gem three Ounces, and when theſe begin to boil in the Water, put in of Tartar and Bay-Salt, each half an Ounce, let them boil a conſiderable while, and then take off the Veſſel, and the Iron being a little warm, ſtrike it over with this Liquor, and when it is dried before a gentle Fire, burniſh it, and you will have a curious Luſtre.

To

To gild Silver or Braſs with Gold Water.

Take two Ounces of Quickſilver, put it into the Fire in a Crucible, and when it firſt ſmoaks, put into it an Angel of fine Gold; ſo immediately take it off, and the Gold will be preſently diſſolved, and if it appear too thin, ſtrain part of the Quickſilver through Fuſtian, then rub the Quickſilver and Gold on Braſs or Silver, and it will ſtick to it; ſet the Braſs or Silver on quick Coals, till it begins to ſmoak; ſcratch it with a Bruſh, that the *Mercury* may ſeparate and evaporate, and leave the Gold of a faint Yellow; then heighten it with Bole, Sal-Armoniack and Verdigreaſe; grind and temper it with Water.

CHAP. IX.

A Treatiſe of Metals, in tinging, tincturing, ordering, and altering their Colours; hardening, ſoftening, refining, melting, making Quickſilver Malleable, and many other curious Matters.

To make Braſs.

TO do this, take three Pounds of Copper, one of *Lapis Calaminaris* in Pouder, melt them together for the ſpace of an Hour, and then put it out, and the Copper will be tranſmuted into a fair ſhining Braſs.

To make Braſs white.

Dilute in *Aqua-fortis* about a Penny Weight of Silver, put it in a Veſſel to the Fire, till the Silver

Silver turns to Water; to which add as much Pouder of white Tartar as will suck up the Water; then make it into Balls, rub any polished Brass with this, and it will take the Colour of Silver.

To make Copper of a Gold Colour.

Melt the Copper, and put a little Zink to it in Filings, and being incorporated, it will be of a very shining Gold Colour.

To make Copper exceeding White.

To make this Metal of a Silver Colour, take Sublimate, Sal-Armoniack, of each a like quantity, boil them in Vinegar, in which quench the Copper when taken red hot out of the Furnace, and it will bear a Lustre like Silver.

To make Gold or Silver soft.

Take Sal-Armoniack, *Mercury* Sublimate, of each a like quantity, melt the Gold or Silver, and put to it a little of this Pouder, and the Metal will be soft.

To make Quicksilver malleable.

When you have hardened your Quicksilver, break the Metal in small pieces, and boil it in sharp Vinegar a quarter of an Hour; put to it then a little Sal-Armoniack, and digest it ten or twelve Days, so put altogether in a luted Crucible, and set it in the Fire, till by degrees it becomes red hot, and cracks little and little, then hang the *Mercury* in a Pot, with Brimstone at the bottom; lute it well up, so set it in the Fire, that it may grow hot by degrees, and receive the Fume of the Sulphur. Do this for a Month once a Day, and the *Mercury* will run, and endure the Hammer upon any Occasion.

Now

Now to harden Quick-ſilver fit for this Work, caſt Lead, ſeparated from its Droſs, into a Veſſel, and when it cools, thruſt in a Pointed Stick, which ſoon take out again, and then caſt in the Quick-ſilver, and it will congeal; then beat it in a Mortar, doing ſo often, and being ſo hard, melt it often, and put it into fair Water, and ſo it will be fixed for your Uſe.

To tinge Silver of a Gold Colour.

To do this, take fine Gold and Silver, good Braſs and Copper, calcined with live Sulphur, of each a like quantity, and it will appear to be Gold of eighteen Carats fine.

To tinge Iron of a Braſs Colour.

To do this, melt Iron in a Crucible, caſting on it Sulphur Vive; then caſt it into ſmall Rods and beat it into pieces, for by this means it will be very brittle, ſo put it in *Aqua-fortis*, diſſolve it, and evaporate the *Menſtruum*, then with a ſtrong Fire reduce the Pouder into a Body again, and it will be of a good Braſs Colour, ſcarcely diſcernable from that made of Copper.

To make Iron a Gold Colour.

Take the Pouder of Alom of *Melmcy*, and Sea-Water, mix them till the Pouder is well diſſolved, then heat a Bar of Iron red hot, and often quench it in this, and it will produce a Gold Tincture.

To make Iron a Silver Colour.

Take Sal-Armoniack in Pouder, and mix it with unſlacked Lime; put them in cold Water, let them diſſolve there, then heat the Iron, and being, when red hot, quenched therein, it will be as white as Silver.

To

To soften Steel, the better to Engrave on, &c.

Do this with a *Lixivium* of Oak, Ash, and unslacked Lime, by casting the Steel into it, where it must remain about fourteen Days. Now to harden it again, when the Work you design is done upon it, quench it six or seven times in the Blood of a Hog, mixed with Goose-Grease; at each time before you dip it again, dry it at the Fire, and it will be very hard, but not brittle.

To tinge Lead of a Gold Colour.

Take Lead that is well purged from the Dross, one Pound, an Ounce of well poudered Sal-Armoniack, half an Ounce of Salt Petre, and two Drams of Sal-Elbrot, put them into a Crucible two Days, in a gentle Fire, and the Lead will be thoroughly tinged.

To make Tin that it will not crack.

Take Honey and Salt, of each a like quantity, when they are mixed, melt your Tin, and throw it when melted about twelve times into it, and so it will purge and leave cracking.

If the Tin thus used be put into a luted Crucible, and calcined twenty four Hours, it will prove like Calx of Gold.

A Pouder to make all Metal soft.

Take a quarter of a Pound of Antimony, *Axungimum*, *Vitel*, and Salt, each a like quantity; make these into a Pouder, melt this Pouder with the Metal, and it will effect your Desire.

To make Metal melt with speed.

Put your Metal into a Crucible, with layings of Brimstone, Salt Petre, and Saw Duft, and these taking Fire in a good Heat, will soon cause the Metal to run, and save you much Labour.

To

To put a good Temper on any Edge-Tools.

When you have made your Edge-Tools of hard Metal, heat them red hot in the Fire, and dip them in cold Water, wherein Soap has been diſſolved; after that, hold them on hot Coals till the Edges begin to wax yellow, then drop Tallow on them, and dip them in cold Water, and the temper will be fitted very excellent for uſe.

To Solder upon Silver, Braſs or Iron.

For ſoft Solder that runs ſooneſt, take Braſs four Penny Weight, Silver five Penny Weight, melt and mix them well together.

To ſeparate Silver from other Metal.

Melt a Piece in a Crucible, and caſt in ſome Sulphur, and when the Sulphur is conſumed, it will carry away in its Fumes the greater part of the Droſs, and that which continues will eaſily be ſeparated from the Silver, which will remain entire.

To gild Iron, &c. a curious Tinge.

Take three Pints of Spring Water, two Ounces of Roch Alom, an Ounce of Roman Vitriol, two Ounces of Verdigreaſe, four Ounces of Sal-Gem, two Ounces of Orpiment; let them boil well, and then add ſome Salt-Petre and Tartar; let theſe boil up again, then take them off, and the Metal being very warm, rub it well with this Liquor, and it will ſet a curious Burniſh on it.

To diſſolve Gold upon ones Hand.

To do this, diſtil the Blood of a Deer newly killed, in *Balneo Mariæ*, ſoak the Gold upon the Lees three times, and the third time it will diſſolve into little Particles.

To

To make Copper very ſoft.

Melt burnt Braſs with Storax, in a Crucible, quench it with Linſeed-Oil, ſo beat it on an Anvil moderately, and boil it again, quench it as before, and ſo do five or ſix times, and when ſufficiently ſoftened, run it with Copper, and it will make it as pliable as Lead.

To make Iron or Silver a Braſs Colour.

Take Flowers of Braſs, Vitriol, and Sal-Armoniack, of each a like quantity, beat them into fine Pouder, and let them ſeeth about half an Hour in ſtrong Vinegar, then take off the Veſſel, putting in Iron or Silver, and covering it, and when it is cold, take out the Metal, and it will appear like fine Braſs, and fit to be gilded.

To colour and ſoften Gold.

Diſſolve Verdigreaſe in Vinegar, and ſtrain it through a Felt, then congeal, and when it begins to wax thick, put to it Sal-Armoniack, and let it harden a conſiderable time, ſo melt the Gold with it, and it will not only heighten the Colour, but render it ſoft and very pliable.

CHAP. X.

A Miſcellany or Mixture of Curioſities: Being rare Secrets, known but to a few, and highly profitable and pleaſant.

To whiten natural Pearl.

TO do this, take half an Ounce of Bean-Flour, Lime, and Eggs beaten together, an Ounce, Water of Conſound, Alcohol of Wine,

Wine, diſtil theſe, and put the diſcoloured Pearls into the diſtilled Water, and they will be a curious Silver White.

To make Horn like Tortoiſe Shell.

Take a Dram of the Litharge of Gold, half an Ounce of quick Lime, mingle theſe well together, and make them into a Paſte with White Wine; and of this Compoſition, make Layings on the Horn, that is thin on both ſides. It being very clear and dry, take it off after five or ſix Hours; add Tripoli and a little Salad-Oil to it, and when that has lain as long, rub it off with a Linnen Cloth, and Poliſh it; and the Places where this has lain, will be diſcoloured like Tortoiſe.

To make a Walnut Grain on white Wood.

Thinly ſpread on it, ſeven or eight Lays of ſtrong Glew one after another, each being firſt dried, and it will become Shining; then wet a wooden Bruſh in common Water, or a fine Pencil, and form your Knots and other ſtrokes in the laſt Glew, whilſt it is warm; then ſtrike hard on it with a wooden Bruſh, ſo lay another laying of Glew, and finely Poliſh it.

To cement broken Glaſs, a curious way.

Take Glair of Eggs mixed with quick Lime, burnt Flint; that is Flint calcined to Pouder, and Eggſhels the ſame; with theſe and Gum-Sandarack, make a Glew or Cement, and anoint the broken Edges of the Glaſs with it warm, as thin as may be; place the other pieces right and even on it, and ſet it cool, then let it lie in Water an Hour; take off the ſuperfluous Glew,

Glew, and the Glass will be as firm and strong as ever, and the Cracks not be discerned, but with great difficulty, by a very clear Light.

To make Sashes for Windows, as clear as Glass.

Take Vellom, Thin Parchment, or the finest white Paper, as smooth on both sides as may be, and being wet and stretched, put it on the Sashes as strait as you can without tearing, then let it gently dry in the Shade; so take two parts of Nut-Oyl, or Linseed-Oyl, two parts of fair Water, and a little white Glass beaten to fine Pouder, boil them in a Glass Body in Sand, set on a Tile pretty near the Fire, till the Water be consumed; then mix and strain it, and lay it on with a fine Pencil, lay it on very thin, but so that it may well soak through the Sashes, and equal all over, and so they will be exceeding transparent.

To soften or dissolve Horn, or Tortoise.

Make a Lee of the Ashes of burnt Bean Pods, strong Vinegar, quick Lime and Tartar; put in the Horn in thin pieces, and in four or five Hours, the Horn will run to a Gelly, or be so soft, that you may work it into what Form you please with little Labour. The like almost may be done with Tortoise-Shell, but it will not Gelly; however, it will be so soft, that it may in a manner be moulded like Wax, and very pliable to make small Boxes, or Cases for Watches, and other things.

To soften Ivory, a Curious way.

Boil a good handful of Sage Leaves in thrice Distilled Vinegar, put in a little quick Lime, and

and boil the Ivory in it, and it will grow ſoft and tough, and not break, but with great difficulty, when it is worked in the fineſt Comb-Teeth, or other fine Works.

So take Spots out of Ivory, and Whiten it, a new Way.

To do this, lay the Ivory in quick Lime, and pour firſt a ſprinkling of Vinegar, and then Water, but not too much, that the Heat may not be too great, to make it ſcale or grow brittle; and when it has lain twenty four Hours, take it out, waſh it with White-Wine, rub and poliſh it, and it will be marvellous White.

To melt Amber for divers uſes.

Take Amber that is not brittle, put in pieces in Juice of Citron, or ſtrong Vinegar, ſo that it may ſwim about an Inch or two in the Veſſel you put it into; and ſo ſet it over a gentle Fire, and let it heat and ſimper till it boil up; then ſee when the Amber grows ſoft or diſſolves, and put it to the uſes deſign'd.

To make Artificial Ambergreaſe.

Take Florence Orris Roots and white Starch, of each an Ounce, Aſphaltum, or Bitumen, half an Ounce, Benjamin an Ounce, Sperma Ceti an Ounce, Ben Nuts an Ounce, Muſk a Dram, Gum Tragacanth as much as will bind it cloſe together, when well incorporated to make up.

To work theſe, obſerve that in the firſt place you make a Paſte of the Benjamin, Starch, and Sperma Ceti; this done, take one part,

and

and make up half the Asphaltum; the other part make into a black Paste, with all the Ingredients; then join and temper them well with your Hand.

To make Light for Lamps, that will not smoak.

To do this, distil a Quart of good Olive-Oil, and make the Wick of Talk, or Stone Alom, like other Wicks; which is to be done by steeping them well in Water, and they will spin out; and to make the Oil rise, make a great many little Holes with a small Awl, or Needle in the Wick, and it will give a bright and curious steady Light, without smoaking.

To make a Candle not to be put out by any Wind.

To do this, fill a small pliable Reed, or Wheat-Straw, with natural live Sulphur, wrap it about with fine small Lint or Cotten, cover it with Wax, and make it in the form of a Candle; and then if the Wind happen to blow it out, the Snuff touching the Sulphur, will immediately light again, to great Admiration.

To hinder any Oil that is to burn, from Smoaking.

To bring this about, distil the Juice of Onions, and put a little of it at the bottom of the Lamp, or whatever you burn it in; and the Oil swimming on the top, the strength of the distilled Liquor underneath penetrating, it will hinder it from smoaking, and make it burn the brighter.

To put a Curious White on Alablaster, and White Marble.

To do this, beat Pumice Stone into fine Ponder, and for twelve Hours or thereabouts, infuse

fuse it in Verjuice; then dip a Sponge in it, and rub the Stone well with it pretty warm, then wash it with a Woollen Cloth, dipped in fair Water, and so dry it with another Woollen Cloth, and polish it, and it will be an admirable shining White.

To make Shining Japan, *or* China-*Ink.*

Take an Ounce of Lamp-Black, two Drams of Indico, half a Dram of Peach Black, one Dram of black Endive burnt; beat them into a fine Powder, and then with a Moiety of Fig-Leaf-Water, and another part of Milk, and a very little Gum-Arabick, and when they are well mixed, make them up for use; but before you use the Lamp-Black in this Work, clarify it in an earthen Pipkin, to take out the Drofs.

To make Yellow Amber White.

This is a rare Secret, and profitable to be put into Practice. To do it, take a Pound of Yellow Amber, and put it into a very strong Crucible of Earth; add to it two Pound of Sal Gem, or Bay Salt, pour upon them the like quantity of clear Spring Water, or as much as will serve to dissolve the Salt; that being done, pour on some River Water, and boil them all together in an Alembick for the space of four Hours, without a Neck, and the Amber will be of a delicate white shining Colour, when polished.

To cast Horn in Moulds like Lead.

Take [illegible] of Wine Lees, burned and unslacked Lime, and make a strong Lee, put into

it the Scrapings or thin Shavings of Horn, and let them boil till the Horn becomes as Pap, or Jelly, then mix with it such Colours as you would have it represent, and cast it into what Mould or Figure you would have it represent, and being cold, it will harden like Glew, and be of an entire Piece, and retain the Colour very well; and thus you may cast the Figures of Flowers, Beasts, Birds, or any other thing, in Horn.

To make a Stone that shall take Fire, and burn of of it self, if you wet it with your Finger.

Take a Load-Stone, that will draw Iron well to it on the one side, and put it away on the other side; put it into a leaded Pot, put to it four Pound of Pitch, and one Pound of Brimstone, lute and well clay your Pot, and set it in a Furnace, giving it a gentle Fire the space of a Day and a Night, augmenting the Fire the second Day, and the third Day more, whilst the Stone is on Fire, and when it is well burned, cool it again, and cleanse it, and so when at any time you wet it, that part will appear on Fire, to the Admiration of the Beholders.

CHAP.

CHAP. XI.

Inſtructions how to Caſt Figures in Wax, Plaiſter, Paſte, Metal, &c. Leaves, Flowers, Medals, and other rare Curioſities, worthy of Note.

How to caſt the Figures of various ſorts of Animals.

WHen you have the Figure ready to mould, then Oil it, and take off the hollow Mould in Plaiſter, after this manner, *viz.*

Having well Oiled it, lay it on Potters Earth, and make choice of thoſe parts of it you think moſt convenient to take off, and there making an Edging or Border of the like Earth; this done, caſt your Plaiſter, well tempered, not too thick nor too thin; that part being well taken, gently lift it up in as few Pieces as you can; repair the Edges, and make little Notches with a Knife, the Edge being Oiled, and ſo put them exactly together again; after this manner a Border or Edging of the ſame Earth, in the place whence you took the part of your Figure; which done, caſt your Plaiſter, as before, and ſo lift up the Piece to repair it; and putting it in its place, continue thus till all be done, which well dried, dreſs the outſide of the Mould with a flat ſmooth Piece of Iron; and when well hardened, mark the Pieces, one after another; let them then leiſurely dry, and join, and tye them together with ſmall Cord, and ſo you have a compleat hollow Mould of Plaiſter, which as the Pieces are more or leſs difficult, may accordingly be

made of more or less Pieces, from three to twelve, &c.

How to cast a hollow Figure, &c.

Supple the inside of your Mould of Paste, till no more Oil will be taken in; then with Cotton-Wooll dry it, and tye all the pieces together with small Cord; then seek a convenient Mouth or Casting-Place, and so melt your Wax, made tough with a little fine Turpentine, and when it is neither too hot nor too cold, run it into the Mould; if your Figure be but little, fill it, and after a small time take out the Stopple of the Mouth, and suddenly turn the Figure upside down, that the remaining Wax may run out; and when you perceive it is sufficiently cold, open it, and you will have a hollow Wax-Figure. If you find it too thin, let the next remain longer in the Mould; if too thick, pour out what remains sooner, and these Figures, when repaired and polished, you may paint to any lively Colour.

How to put an inward Mould or Kernel into any Waxen Figure, &c.

If your Figure be of a living Creature, with a moderately hot Knife divide it into two parts lengthways or overthwart; then take Potters Earth, mixed with a little fine Charcoal Dust, moistening and beating them with a little Iron Rod, till all is well incorporated, and as soft as Paste, and with this Paste fill the inside of the Waxen Figure, which dry, cover the outside of each Piece where they are to be joined, with the like Earth, very thin and moist

but

but beware it run not over upon the Edges of the Wax, and having joined it, repair it with a thin piece of Copper or Iron warm upon the Joint; then make a Git or Casting Hole in the most convenient place, and let it be long enough, with Breath Holes. If you conceive any part of the Figure, to which the Metal will not easily pass, then rowl up little pieces of Wax, about the thickness of a Goose Quill, or according to the size of the Figure, which with a heated Instrument stick to some part of it, that the end may reach the place suspected, where the Metal will not easily run, and there fasten it; then take little Tags, or Iron, about that bigness, about half a Finger long, proportionable to the thickness of the Wax of the innermost Mould, and thrust these quite through the Figure, to the Purpose that the Kernel being in all parts supported, it may not touch or join to any part of the outward Mould.

To make the Cases or Facing, &c.

Take Founders Earth, very fine, and steep it in a Vessel of Earth, filled with fair Water, and by Inclination pour it into another, that the drossy part may remain behind; then add to it some Bone, mix them well together, and with a large Pencil give a smooth Laying of the Earth on the Waxen Figure; dry it, and do so six times, and when it has had the last drying, strengthen it with Potters Clay, well mixed, and beaten with Hair, and that being dry, put your Mould over the Fire, on Iron Rods, in form of a Gridiron; but beware the Wax boil not within the Mould, lest it break it; lean it then on one side, that the Wax may all

run clean out at the Casting Mouth; then heat your Figure over a gentle Fire, till it be well hardened, and melt the Metal you intend to cast the Figure into a good Heat, and have two Crucibles in the Fire, one empty to pour the Metal into, that the Drois and Scum may not remain in it, and when it is at a proper Heat, set the Mould fast in Sand, pour in the Metal, and let it thoroughly cool; so by breaking your Mould, you will have a perfect Figure without Seam; but if the Figure be large, you must bind the Mould with nealed Wire, lest the Weight strain and flaw it.

To Cast Medals very Lively,

To do this, calcine Speculum or Spaud in a Crucible, then put it into a Vessel of Earth, and pour Water on it; and when you have well stirred it, add as much more Water, and being settled, take it out, and make it into Balls; then a second time calcine it, and beat it into Pouder, aspersse some Vinegar on it, and by that means make it into a Paste; then a third time calcine it, and when cold, beat it to Pouder, and searse it very fine, adding an Ounce of Sal Armoniack dissolved in Water, to 12 Ounces of Speculum; keep it then in a Cellar, and with it make your Moulds, or otherways frame your Medals of it, moistening it; also with *Crocus Martis*, or Saffron of Iron, may be made another Spaud, in which you may Cast the finest Hair imaginable.

To

To Cast Laurel-Branches, Flowers, Vine-Leaves, and the like Curious Things.

To do this, make a Circle of Earth like a Box, to the bigness of the thing you intend to Cast; and imitate such Branches, Leaves or Flowers, as are of a good Substance; for if too thin, the Metal will not without great difficulty run; and when you have chose what you design, run a Needle with a Thread, at the end of the Stalk of the Flower or Leaf, and so through the middle of it, fastening one end of the Thread to the bottom of the Circle, and the other to a Stick that is to support over against it in a perpendicular Line, that your Flower or Leaf touch not the sides of the Circle; but before you fasten either, put a little piece of Wax at the end of the Stalk for a Git-Hole, which must touch the bottom where the Thread was fastened. Having done this, cast a Composition of Plaister of Brick and Plume, with Sal-Armoniack Water; and when it is well mixed, very fine and dry, bake it till the Flower be wholly consumed that it encompasses, and has taken the Impression off; and being almost cold, run into it Tin, Silver or other Metal; if Tin, you may put a third part Lead, or if Silver, a little Copper; and you will find the Leaves or Flowers very curiously taken in the Metal; take them out by little and little, breaking off the Mould; and after this manner you may Cast all Reptiles or Creeping Things.

To mould off Figures in Paste.

Take the Crumb of a new drawn White Loaf, mould it till it becomes close as Wax, and

and very pliable; then beat it, and rub it with a Rowling Pin, as fine and fit as it will go; then print it in the Moulds, and when it has taken the suitable Figure you desire, dry it in a Stove, and it will be very hard; and to preserve this from Vermin, you may mix a little Pouder of Aloes with it.

To mould small Figures of Jasper Colour.

Oil your Moulds with a fine Pencil, and diversify them with such Colours as you please, with Gum Tragacanth; if they spread or run, put a little of the Gall of an Ox, for the thicker, the harder it will prove; then mould your Paste of the Colour of Jasper, or the like; put it in to fill the Mould, tye it with a Wire, and take it out, repair and varnish it, and set it to harden.

Red Marble or Porphiry, to counterfeit.

Take *English* Brown, if it seem too reddish, put some Umber or Soot; then take a very smooth Board, a well polish'd Marble, or a large piece of Glass a little oil'd: Then take some *English* Brown, with some Roset or Lake, and grind them with Gum Tragacanth; then with a large Brush flurt or sprinkle the Glass, according to the Marks and Veins of the Stone. When it is enough spotted, let it dry; then temper your *English* Brown and Umber, with Gum Tragacanth Water into a Paste; which being laid on the Spotted Glass or Marble, let it dry, and polish it.

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